

*Arithmetic
for You*

3

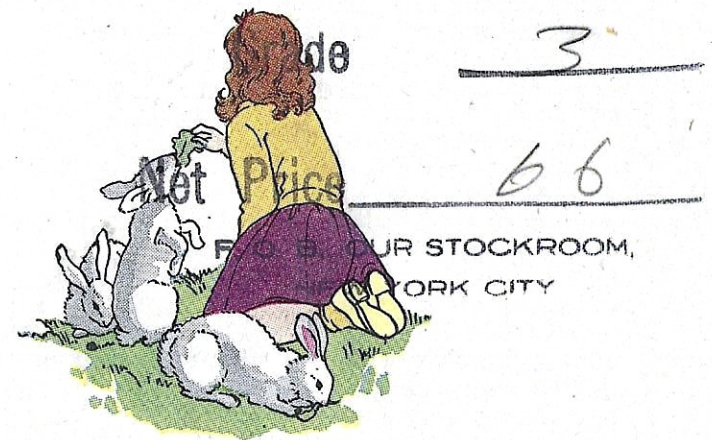
ARITHMETIC FOR YOU

3

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LYONS AND CARNAHAN

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FOREWORD

Time marches on, says a familiar voice, and with it social change. The pattern of our social life is undergoing constant change. Education, too, is part and parcel of our general social structure and must be continually reshaped to fit our changing purposes.

The curriculum of the schools has one pole anchored in the nature of the child; the other, in the nature of society. It serves as a means for the achievement of social ends. Like the state, then, it is always subject to revision.

In the spirit of progress *Arithmetic for You* is now offered as the successor of the *Child-Life Arithmetics*. What has been learned from the operation of the earlier series in thousands of classrooms is now passed on to teachers in the refinements and improvements of the present texts.

Though arithmetic is one of the most conservative fields of study and therefore one of the most resistant to change, nevertheless the extent of changes in the subject is impressive. A great number of topics and types of examples, as well as problems, have disappeared from the better books in the last generation. But the most significant differences among modern arithmetics are not to be found in the selection of content or its gradation. The battleground at the moment is in the field of *instructional methodology*. This also has been the battleground of liberal and conservative leaders speaking for education in general during the bewildered thirties. Is the problem approach the basic method of instruction? Are difficult computational processes properly analyzed and gradually developed? Is the pupil pushed into new areas of learning without making amends for vacation loss? Are unnecessary language difficulties in vocabulary and sentence structure carefully weeded out? Does the pupil encounter the primary number combinations with a frequency proportional to their experimentally determined difficulty? Is the emphasis on problem solving commensurate with the importance of quantitative thinking in everyday life? Are the modern techniques of diagnosis and remedial treatment made integral parts of the instruction throughout the books? Is there content appeal? The answers to questions of this type will go far to determine the rating of modern arithmetics. *Arithmetic for You* is now ready for the test.

THE AUTHORS.

Analysis of the Course

1. Gradation. a. Concepts. Processes. Order of development.

(1) Meaning of arithmetical language and terms: Pages 1-32

(2) *Notation*
Numbers to 10,000; Roman numbers, I-XII

(3) *Addition*
Sums not more than 9; sums, 10-18.

In columns: sums not more than 9; sums, 10-18; three numbers, sums 10-18; two-figure numbers without carrying; three-figure numbers without carrying; by endings; two-figure numbers with carrying; two-figure addends with three-figure sums; three-figure numbers with carrying.

(4) *Subtraction*
How many left, difference, how many more, checking, subtraction facts involved in borrowing, two-figure numbers without borrowing, zero in remainder, three-figure numbers without borrowing, zero in subtraction, two-figure numbers with borrowing, three-figure numbers with borrowing, zeros in borrowing.

(5) *Multiplication*

By 5, by 2, multiplying two-figure numbers without carrying, checking multiplying three-figure numbers without carrying, zeros in multiplication by 3, by 4, multiplication with carrying.

(6) *Division*

By 2, by 3, by 4, by 5.

(7) *Equal Parts*

Finding $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{5}$.

(8) *Measuring*

Dozen; half dozen; time; weeks yards and feet; feet and inches measuring in inches, feet and yards money, see "Money"; quarts and pints; gallon; tables of measure, pages 321.

(9) *Money*

Counting, adding, dollar and half dollar, dollar sign and decimal point making change, adding dollars and cents, subtracting money numbers.

2. **Learning Procedure.** a. Motivation to show need of process. b. Use of process to develop skill. c. Checking. To acquire accuracy in addition and subtraction, emphasis is given throughout upon checking.

3. **Problem Solving.** Throughout this series of arithmetics the aim is to develop in the pupil a problem-solving attitude, whereby he secures independence in arriving at a solution. In this grade simple problem situations within the child's experiences require the pupil's selection of the right process. See pages 101, 130, 136, 147, 236, 276, 307, 309, 311.

4. **Comprehension.** a. *Vocabulary.* At no point is the reading vocabulary of this book graded beyond middle third-grade level; in the main it is second-grade level. All arithmetical terms and words that are needed are explained and made meaningful when used. b. *Sentence Structure.* In this text reading difficulty has been reduced to the minimum. Long and involved sentences are not used. Generally, only the simple sentence is used. The "if clause" is never used.

5. **Acquiring Skill.** To acquire skill in the use of a process demands that the process be used in problems and exercises immediately following the demonstration. This plan is strictly adhered to in this text.

6. **Maintenance of Skill.** The immediate use of a process *develops* skill; the frequent re-use of a process *maintains* skill. Adequate provision must be made for maintenance of skill. In this text planned maintenance of skill is provided through drills on fundamentals, practice exercises on processes, tests, and remedial exercises.

7. **Testing.** There are 20 tests in this text, of which 14 are diagnostic.

8. **Remedial Program.** Graded remedial practice follows immediately the diagnostic tests, beginning with the fourth test, page 138. This practice utilizes a variety of devices, designed to remedy individual weaknesses revealed by the tests.

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The boys and girls went all the way around three blocks.

They blew horns.

Ted carried a small flag.

They had a good time.

After the parade Judy said, "Come to my house."

She gave the children ice cream and cake.

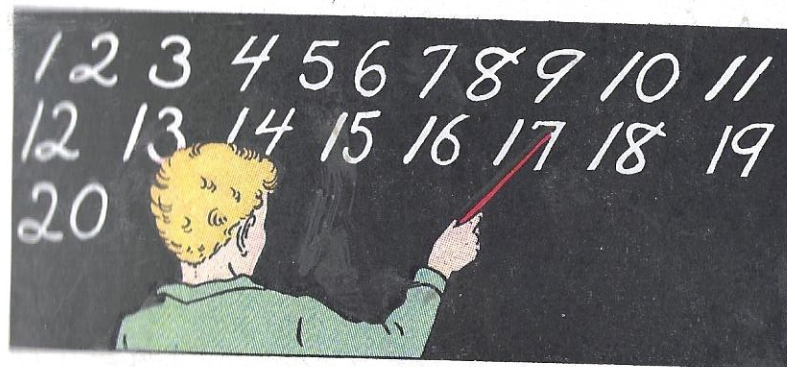
Which girl do you think is Judy?

Count the children.

How many children are there?

Count the dishes of ice cream and cake.

Is there a dish of ice cream and cake for each child in the picture?



How to Read Numbers

The next day at school Miss Gordon wrote some numbers on the blackboard.

The children took turns reading the numbers.

Jim read up to ten. Then Miss Gordon asked Tom to finish.

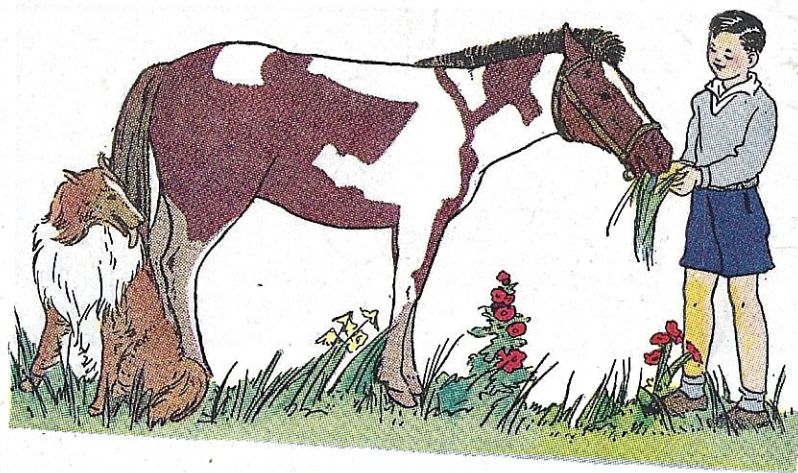
Tom read, "eleven, twelve, thirteen, fourteen, fifteen, sixteen."

Tom was not sure of seventeen, eighteen, nineteen, and twenty.

Read the numbers Miss Gordon wrote.

Read the numbers written below.

16	9	20	14	7	12
11	3	15	19	8	13



Jack likes to play with his pony and with his dog.

Jack's dog is at your left.

Which is your left hand?

Jack is at your right.

Which is your right hand?

Do you see where the pony is?

The pony is in the middle.

Read the first line on this page.

Do you read from left to right?

Where is the left end of the line?

Where is the right end of it?



Some of the children drink milk at lunch time.

The first one at the left is Don.

Find Don.

The second one is Betty.

The third is Jane.

The fourth one is Tom, and the fifth one is Judy.

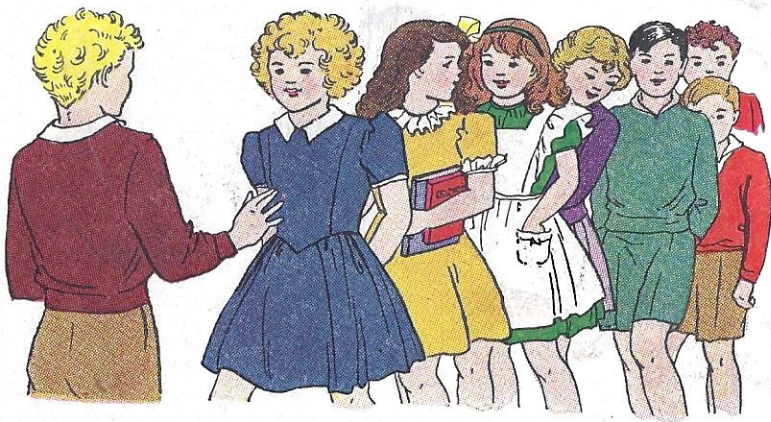
Find Betty, Tom, Jane, and Judy.

Find Judy. Is she at the right or at the left end?

Which girl is in the middle?

Which girl is next to Don?

Tom is between which two girls?



After lunch all the children went to their rooms in the school.

Tom was the first one back in his room. He looked to see who came second, third, fourth, fifth, sixth, seventh, eighth.

Helen was the second girl to come in. She had 2 books. Find Helen.

Jack was sixth, Billy was seventh, and Don was eighth.

Find each of these boys.

How many girls do you see in the picture? How many boys?

How many children in all?



Don, Billy, and Jack are climbing in a big tree.

Jack is near the bottom of the tree.

Don is near the top of the tree.

Don climbed higher in the tree than the other boys.

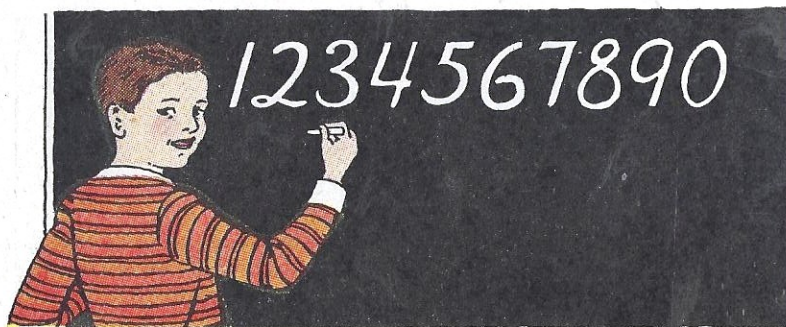
Billy is lower in the tree than Don.

He did not climb so high as Don.

Jack is lower in the tree than either of the other boys.

He is the lowest in the tree.

Find Billy, Don, and Jack.



Dick wrote all the figures you see in the picture.

Dick writes each figure carefully. He begins at the top of each figure.

1. Make these figures. The red part shows where Dick begins.

1 2 3 6

2. Be sure to make the red part first.

4 5 7 8 9 0

3. Which figures are hardest for you to make? Practice making them until you can make all the figures easily.

Row A		1	2	3	4	5	6	7	8	9
Row B	10	11	12	13	14	15	16	17	18	19
Row C	20	21	22	23	24	25	26	27	28	29
Row D	30	31	32	33	34	35	36	37	38	39
Row E	40	41	42	43	44	45	46	47	48	49
Row F	50	51	52	53	54	55	56	57	58	59
Row G	60	61	62	63	64	65	66	67	68	69
Row H	70	71	72	73	74	75	76	77	78	79
Row I	80	81	82	83	84	85	86	87	88	89
Row J	90	91	92	93	94	95	96	97	98	99

The first row shows the numbers from 1 to 9. The second row starts with 10.

1. Find the number 25. It is in the row starting with what number?

2. Find 65. It is in the row starting with what number?

3. Find 94. Find 79. Find 43.

4. Say the number that is missing in each row below.

15 — 16 — ? — 18 49 — ? — 51 — 52

32 — ? — 34 — 35 96 — 97 — 98 — ?

5. What number in each row below is the largest? What number is the smallest?

First row 11 53 34 77 64 45 19 59

Second row 94 37 29 12 75 92 24 87

Jane looked at the number at the top of this page.

She said, "This is page 10. The page before 10 is 9. The page after 10 is 11."

1. Find page 54 in this book. What is the page just before it? What is the page just after it?

Page numbers in a book come in the same order as when you count.

2. Find page 35. Must you turn the pages toward the front or the back of the book to find page 27? From page 35, which way must you turn to find page 39? Page 17? Page 50?

3. Betty wants to turn from page 73 to page 34. Should she look nearer the front or the end of the book?

4. Which of these pages comes nearest the front in a book?

75 38 45 16 19

5. Which way is each of these pages from page 73?

69 80 16 90 58



A New Way to Count

Father counted the pennies in Sue's little bank.

Sue had saved one hundred pennies.

Father said, "I will show you how to count by tens.

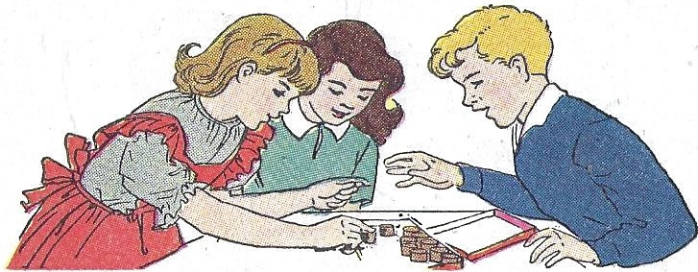
Put ten pennies in each pile.

Make as many piles as you can.

Count 10 for the first pile. The second pile makes 20, and so on.

Start with the first pile. Count ten, twenty, thirty, and so on, to one hundred. Say the right number with each ten pennies."

Sue counted to one hundred by tens.



Sue showed the pennies to her friends.

She told the children how her father had counted the pennies.

The children wanted to count the pennies.

"I will show you how to count by tens," Sue said.

Sue took the pennies.

She put each pile in a box.

As she put the piles in the box, she said, "Ten, twenty, thirty, forty, fifty, sixty."

Ted said, "Wait, Sue. Let me finish counting. I can count from sixty up to one hundred."

"Wait until I have finished. Then you may try," said Sue.

Sue picked up the next ten pennies.

She counted on, "Seventy, eighty, ninety, one hundred."

She said, "I knew I could count them by tens."

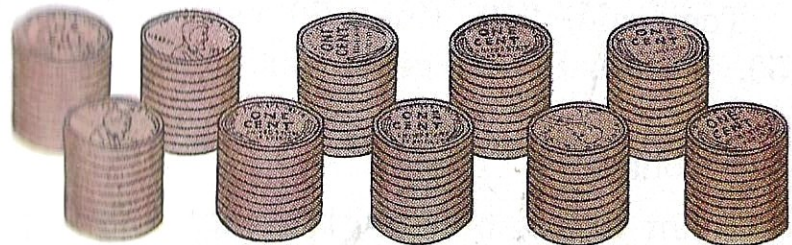
Sue said, "Now you may count the pennies, Ted."

Ted counted the pennies by tens. As he counted, he took each pile from the box and put it on the table.

Ted said, "You were right, Sue. There are ten piles. You have saved one hundred pennies."

After that, some of the other boys and girls counted the pennies.

Ten, twenty, thirty, forty, fifty, sixty, seventy, eighty, ninety, one hundred.





Tom saw his father count some dimes.

His father said, "Each pile of dimes is worth one dollar."

He showed Tom how to tell what each pile was worth.

There were 10 dimes in each pile.

Tom counted the dimes in one pile. He counted each dime as ten cents.

Tom said, "10 cents, 20 cents, 30, 40, 50, 60, 70, 80, 90 cents, one dollar. Ten dimes make one dollar. Each pile is worth one dollar."

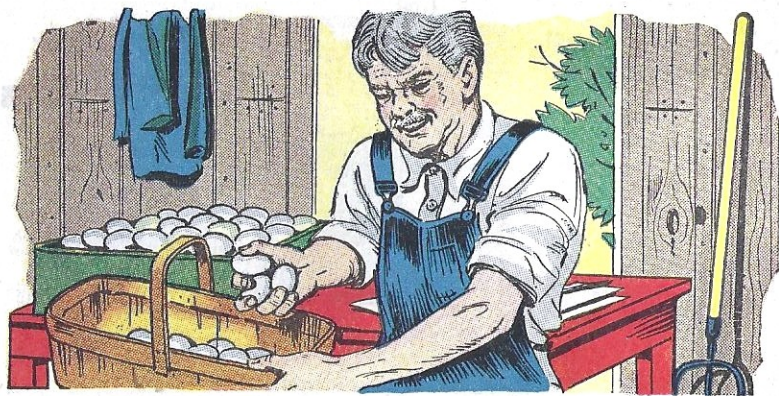
Count to one hundred by tens.



1. The children in the Glen School marched out of the building at noon and at 8 o'clock. They marched in 2's. Jack's mother watched his class march out. She counted them as they came out. She said, "Two, four, six, eight, ten, twelve, fourteen, sixteen, eighteen, twenty."

2. Counting by 2's is much faster than by 1's. Count to twenty, starting with one and saying every number. Now count to twenty by twos. The numbers below show you how to count by twos. Say only the black, heavy numbers.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20



1. Louise told the class how her grandfather counted eggs. He would take the eggs out of a basket three at a time. When he wanted 18 eggs he would count, 3, 6, 9, 12, 15, 18.

2. The numbers below show you how to count by threes. Count to 18 by threes.

1	2	3	4	5	6	7	8	9
10	11	12	13	14	15	16	17	18

3. Count the seats in your room. Count by 2's. How many seats are there?

4. Now count the seats by 3's. Does it take less time to count the seats by 3's?



Ann helped Mother get breakfast.

Mother told Ann to cut some oranges in halves.

She said, "Put half an orange at each place on the table."

Ann cut each orange through the middle.

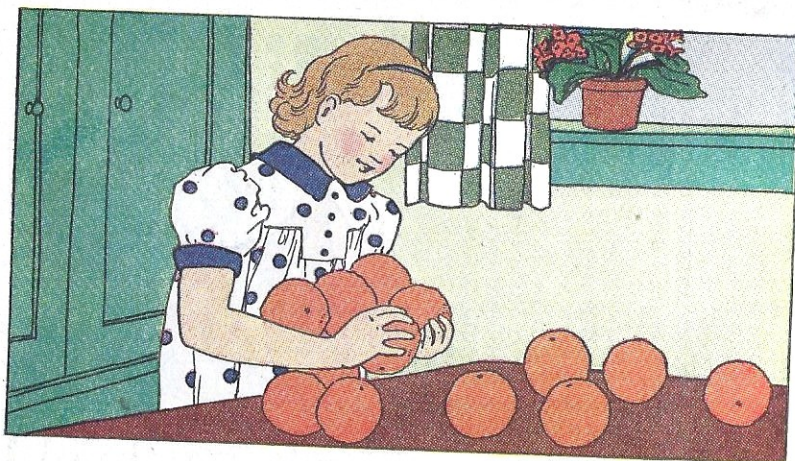
She cut each orange so as to make two equal pieces.

Each piece was half of the orange.

Each orange made two halves.

The two halves were the same in size.

Two halves make one whole orange.



The next day Grandmother and Sue brought home a dozen oranges.

Sue counted the oranges. There were 12 oranges.

Mother said, "You have a dozen oranges. A dozen means 12."

12 equals 1 dozen

12 = 1 dozen

The sign "=" means "are" or "equals."

What other things could Grandmother and Sue get by the dozen?

How many eggs are 1 dozen eggs?

Which is more, a dozen or 15?



One morning Mother said to Ann, "Here are a dozen rolls.

Put half of them on the table.

Put the other half on the stove to keep warm."

Ann put the rolls on two dishes.

She put the same number of rolls on each dish.

Half of the rolls were on one dish and half were on the other dish.

There were 6 rolls on each dish.

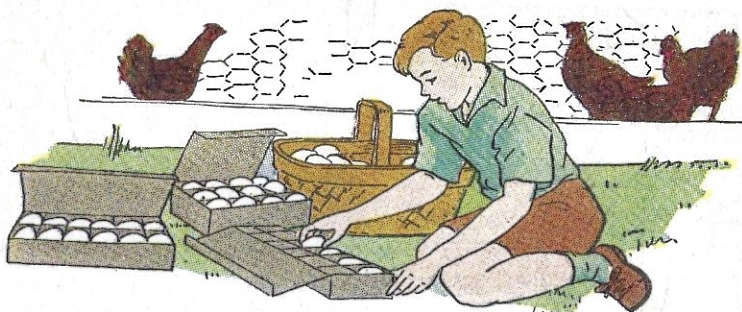
Six rolls are one-half of a dozen rolls.

Half of a dozen is six.

6=half of a dozen

6= $\frac{1}{2}$ dozen (one-half dozen)

The Dozen and Half Dozen



Billy collected a basket of eggs and put some of the eggs into egg boxes.

Each egg box in the picture will hold a dozen eggs.

1. Billy has filled 2 boxes. Count the eggs in each box.

2. One of the boxes has 2 long rows of eggs. How many eggs are in each row? Each row holds a half dozen eggs.

12 things=one dozen (1 doz.)

6 things=one-half dozen ($\frac{1}{2}$ doz.)

3. How many rows of 3 eggs each are in the shorter box? Count the eggs by 3's.

4. How many rows of 4 eggs are in the shorter box? Count the eggs by 4's.

Counting Things by Groups

The School Post Office

The children in grade three had a school post office. When the post office opened on Monday, they counted the stamps. They had these stamps.

ONE-CENT STAMPS



TWO-CENT STAMPS



THREE-CENT STAMPS



FIVE-CENT STAMPS



1. How many five-cent stamps were there?

2. How many one-cent stamps were there?

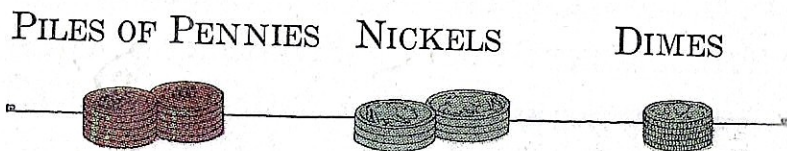
3. How many two-cent stamps?

4. The two-cent stamps in the school post office were in two long rows. What was the cost of one long row of two-cent stamps? Count each stamp as 2 cents. Begin, 2 cents, 4 cents, 6 cents.

5. How much did the five-cent stamps cost? Count the five-cent stamps as 5 cents each. Begin 5, 10.

6. How many three-cent stamps did they have? How much would one long row of three-cent stamps cost? Count by 3's.

That afternoon the children counted the money they got for the stamps they sold. Here are pictures of the money.



7. How many pennies did they have?
8. How many nickels were there?
9. How many cents are the nickels worth? Count each nickel as 5 cents.
10. How many dimes were there?
11. How many cents are the dimes worth?



You found the cost of more than one stamp when each stamp cost the same. We often buy more than one of other things.

1. The Halloween masks in the store window cost 5 cents each. Jane wants to buy 3. How much will 3 masks cost?

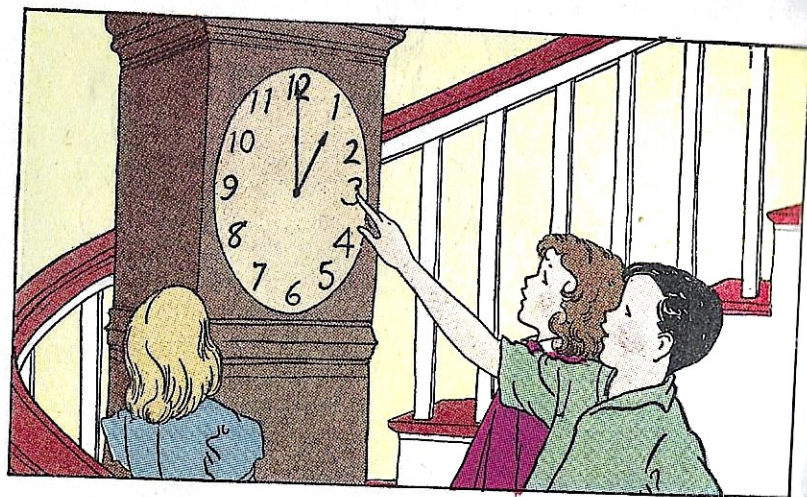
To find the cost of 3 masks Jane counted by 5's. Jane said, "5 cents, 10 cents,"

2. Tom wants to make 4 paper witches riding small brooms. The brooms cost 3 cents each. Count by 3's to see how much the 4 brooms will cost.

3. Ned is cutting out paper cats. The black paper sells at 2 cents a sheet. Count by 2's to find the cost of 5 sheets.

4. Make a problem in which you buy 3 things at 4 cents each. Find the cost.

Time on the Clock



Jack says, "The short hand is the hour hand. It goes from one number to the next in an hour."

To what number does the short hand point? What time is it by Jack's clock?

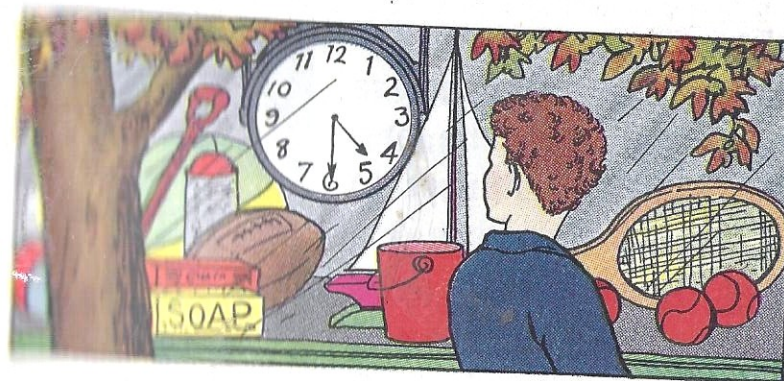
Where should the short hand point in one more hour?

The long hand should be at the top when each hour begins.

In one hour the long hand goes all the way around.

Where should the short hand point at 5 o'clock? The long hand?

Half Hours on the Clock



Don went to the store for Mother.

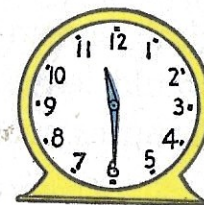
On the way he saw this clock.

The last number the hour hand had passed was 4.

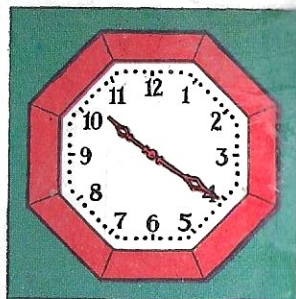
He thought, "The long hand is at the bottom. It is halfway around. The long hand goes halfway around in half an hour. It is half an hour after four o'clock."

We say the time on the clock is "half past four."

Tell the time on each of these clocks.



1. The spaces marked between the numbers are minute spaces. The long hand takes 1 minute to pass over one space.



2. There are 5 minute spaces between each two numbers on the clock. See if you can count the minutes all the way around the clock face by 5's. Start at the 12. Begin 5, 10, 15. How many minutes are there?

60 minutes equal 1 hour
60 min.=1 hr.

3. Look at the picture and tell how many minutes past the hour it is. Read it two ways, "It is 20 minutes past 10," or "It is 10:20."

4. Jack got to the station at 10:20, the time shown above on the clock. His train would leave at half past ten. In how many minutes would his train leave?

5. Draw a clock face to show 9:25.



1. Over how many minute spaces must this minute hand move before 6 o'clock? It must pass 10 more spaces. The time may be read, "10 minutes to 6."

Half Hour and Quarter Hour

2. When the long hand is at 6 it is half way around. It takes the long hand half an hour to go from 12 to 6. Count the minute spaces by 5's from 12 to 6. How many minutes in half an hour? Count the minute spaces from 6 to 12. How many 30-minute periods are there in one hour?

60 min.=1 hr. 30 min.=1 half hr.

3. Fifteen minutes is called a **quarter hour**. When the time is 15 minutes past 6, we say it is "a **quarter past 6**." When the time is 15 minutes to 3, we say it is "a **quarter to 3**."

4. In what other way can you say 8:15?
 9:00? 15 minutes to 7?

Days in a Week

1 Sunday	5 Thursday
2 Monday	6 Friday
3 Tuesday	7 Saturday
4 Wednesday	

Miss Brown wrote the names of the days of the week on the blackboard. She asked the children to say them.

1. Say the names of the days of the week.
2. What is the first day in the week?
3. What is the second day?
4. Name the third day. The fifth.
5. What is the last day in the week?
6. On what day of the week does Thanksgiving always come?
7. What day will tomorrow be? What day was yesterday?
8. What day was the day before yesterday?
9. What day will day after tomorrow be?
10. Write the days of the week.

Writing with Signs

Miss Brown asked Ann how many days there are in a week.

Ann said, "We go to school 5 days. There are 2 other days. 5 days and 2 days are days."

Miss Brown wrote on the blackboard

5 days and 2 days are 7 days

5 days + 2 days = 7 days

Ann could read both lines. She knew that the + sign means "and." The = sign means "are" or "equals."

1. Read the lines that Miss Brown wrote on the blackboard. Read both lines like this, "Five days and two days are seven days."

When Ann said, "5 days and 2 days are 7 days," she was **adding** 5 and 2.

2. Add 7 and 2. Read these lines.

7 days and 2 days are 9 days

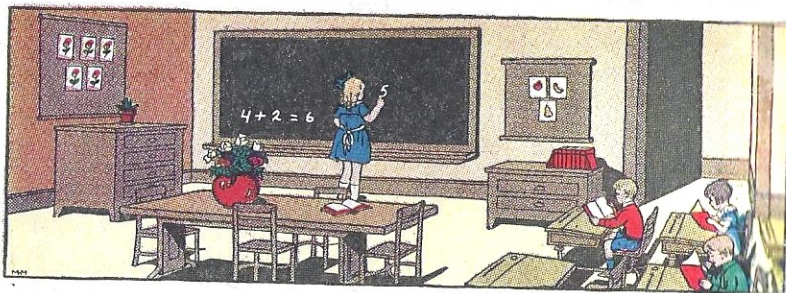
7 days + 2 days = 9 days

$$7 + 2 = 9$$

3. Add 8 and 1.

8 and 1 are 9

$$8 + 1 = 9$$



The sign for adding is $+$. Read it by saying **and** or **plus**.

The sign $=$ means **are** or **equals**.

$4 + 2 = 6$ may be read, "4 and 2 are 6" or "4 plus 2 are 6."

1. The large cabinet has 4 drawers and the one by the door has 2 drawers. How many drawers are in both cabinets?

4 drawers and 2 drawers are 6 drawers

4 drawers $+$ 2 drawers $=$ 6 drawers

2. Write the following example about Betty's schoolroom in two ways. Read it both ways.

On the front wall are 5 pictures and on the side wall are 3 pictures. How many pictures are on both walls?

The $+$ sign tells us to add.



Write on a paper what you say in adding the numbers in each of these problems. Use the signs you have learned. Then write the example using only the numbers and signs. The first problem shows you how.

1. Jack likes to add numbers of things that he sees. One morning on the way to school Jack saw 6 planes and then 3 more planes. How many planes did he see?

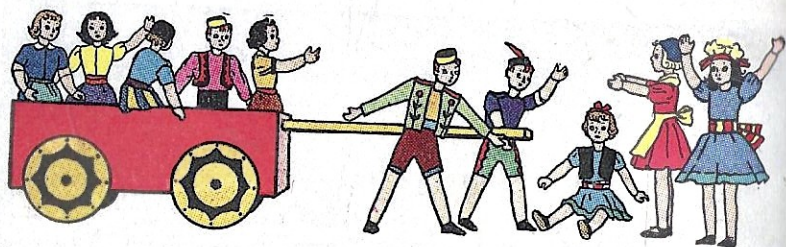
6 planes $+$ 3 planes $=$ 9 planes

6 $+$ 3 $=$ 9

2. Jack met 2 boys from his class. A few minutes later he met 5 other boys. How many boys did he meet?

3. On his way to school Jack saw Tom's rabbits. There were 2 gray rabbits and 6 white ones. How many rabbits did he see?

Finding the Sum



Ann said, "The 3 dolls at the right want to ride with the 5 dolls in the cart. 3 and 5 are 8. There would be 8 dolls in the cart."

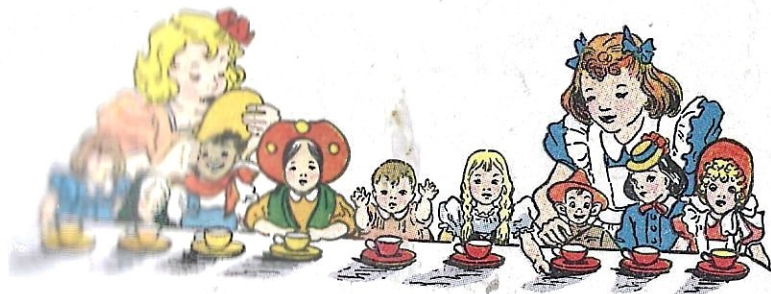
8 is called the **sum** of 3 and 5.

The sum of 3 and 6 is 9. When we add 3 and 6, the sum is 9.

Find the sums of the numbers below. Say the first example like this, "2 and 1 are 3. 1 and 2 are 3."

- | | | |
|------------|------------|-------------|
| 1. 2 and 1 | 5. 6 and 1 | 9. 3 and 2 |
| 1 and 2 | 1 and 6 | 2 and 3 |
| 2. 3 and 1 | 6. 7 and 1 | 10. 4 and 2 |
| 1 and 3 | 1 and 7 | 2 and 4 |
| 3. 4 and 1 | 7. 8 and 1 | 11. 5 and 2 |
| 1 and 4 | 1 and 8 | 2 and 5 |
| 4. 5 and 1 | 8. 4 and 3 | 12. 6 and 2 |
| 1 and 5 | 3 and 4 | 2 and 6 |

Adding in a Column



The Doll's Birthday Party

1. Elsie and Jane are giving a party for Sally, one of Elsie's dolls. Elsie has six dolls. Three of Jane's dolls came. How many dolls are at the party?

The numbers in the box are in a column. They are placed one above another. Add these numbers. Add from the top down. Add: 6 dolls and 3 dolls are 9 dolls.

2. Elsie has 4 tea cups for the dolls. Jane brought 5. How many cups are there? (Write 4 and 5 in a column and add.)

3. Write these numbers in columns and add them. Tell each sum.

$$3 + 4 = 7$$

$$2 + 7 = 9$$

$$5 + 3 = 8$$

Finding Easy Sums



Read each example with its sum.

1. $\frac{2}{6}$ $\frac{2}{4}$ $\frac{6}{9}$ $\frac{5}{8}$ $\frac{2}{3}$ $\frac{3}{6}$
2. $\frac{3}{6}$ $\frac{1}{8}$ $\frac{1}{5}$ $\frac{6}{7}$ $\frac{4}{8}$ $\frac{1}{4}$
3. $\frac{1}{2}$ $\frac{5}{4}$ $\frac{1}{4}$ $\frac{1}{6}$ $\frac{4}{5}$ $\frac{3}{8}$

Dorothy read the examples with the sums two or three times. Then she covered the sums with a piece of paper and tried to say them. Can you do this?

Adding Numbers in Columns

There are 4 exercises on this page. Read each example in these exercises two or three times. Read them this way, **4 and 1 are 5**, **1 and 4 are 5**.

$$1. \quad \begin{array}{r} 4 \\ 1 \\ \hline 5 \end{array} \quad \begin{array}{r} 1 \\ 4 \\ \hline 5 \end{array} \quad \begin{array}{r} 6 \\ 1 \\ \hline 7 \end{array} \quad \begin{array}{r} 1 \\ 6 \\ \hline 7 \end{array} \quad \begin{array}{r} 3 \\ 1 \\ \hline 4 \end{array} \quad \begin{array}{r} 1 \\ 3 \\ \hline 4 \end{array} \quad \begin{array}{r} 2 \\ 1 \\ \hline 3 \end{array} \quad \begin{array}{r} 1 \\ 2 \\ \hline 3 \end{array} \quad \begin{array}{r} 1 \\ 1 \\ \hline 2 \end{array}$$

$$2. \quad \begin{array}{r} 5 \\ 1 \\ \hline 6 \end{array} \quad \begin{array}{r} 1 \\ 5 \\ \hline 6 \end{array} \quad \begin{array}{r} 8 \\ 1 \\ \hline 9 \end{array} \quad \begin{array}{r} 1 \\ 8 \\ \hline 9 \end{array} \quad \begin{array}{r} 7 \\ 1 \\ \hline 8 \end{array} \quad \begin{array}{r} 1 \\ 7 \\ \hline 8 \end{array} \quad \begin{array}{r} 5 \\ 4 \\ \hline 9 \end{array} \quad \begin{array}{r} 4 \\ 5 \\ \hline 9 \end{array} \quad \begin{array}{r} 2 \\ 2 \\ \hline 4 \end{array}$$

$$3. \quad \begin{array}{r} 4 \\ 2 \\ \hline 6 \end{array} \quad \begin{array}{r} 2 \\ 4 \\ \hline 6 \end{array} \quad \begin{array}{r} 6 \\ 2 \\ \hline 8 \end{array} \quad \begin{array}{r} 2 \\ 6 \\ \hline 8 \end{array} \quad \begin{array}{r} 3 \\ 2 \\ \hline 5 \end{array} \quad \begin{array}{r} 2 \\ 3 \\ \hline 5 \end{array} \quad \begin{array}{r} 5 \\ 2 \\ \hline 7 \end{array} \quad \begin{array}{r} 2 \\ 5 \\ \hline 7 \end{array} \quad \begin{array}{r} 3 \\ 3 \\ \hline 6 \end{array}$$

$$4. \quad \begin{array}{r} 5 \\ 3 \\ \hline 8 \end{array} \quad \begin{array}{r} 3 \\ 5 \\ \hline 8 \end{array} \quad \begin{array}{r} 7 \\ 2 \\ \hline 9 \end{array} \quad \begin{array}{r} 2 \\ 7 \\ \hline 9 \end{array} \quad \begin{array}{r} 4 \\ 3 \\ \hline 7 \end{array} \quad \begin{array}{r} 3 \\ 4 \\ \hline 7 \end{array} \quad \begin{array}{r} 6 \\ 3 \\ \hline 9 \end{array} \quad \begin{array}{r} 3 \\ 6 \\ \hline 9 \end{array} \quad \begin{array}{r} 4 \\ 4 \\ \hline 8 \end{array}$$

Now cover the sums and try to say them. Do you see that the sum of 4 and 1 is the same as the sum of 1 and 4? Whichever number comes first, the sum is the same.

36 Adding Numbers in a Column

1. Frank paid 6 cents for a spelling tablet and 2 cents for a post card. How much did he pay for both?

2. How much are 2 cents and 4 cents? How much are 3 cents and 1 cent?

3. How many are 3 and 5? Write 3 and 5 in a column. Add, and write the sum in the column.

4. Write these numbers in columns and find the sums.

2 and 7 7 and 2 5 and 1 5 and 4

5. How many cents are needed to buy a stamp that costs 3 cents and a stamp that costs 2 cents?

6. Frank bought an orange for 4 cents and an apple for 3 cents. How many cents did both cost? How many are 4 and 3? Write 4 and 3 in a column and add. Write their sum in the column.

7. Write these numbers in columns and find the sums.

4 and 5 3 and 6 4 and 4

Easy Addition

37

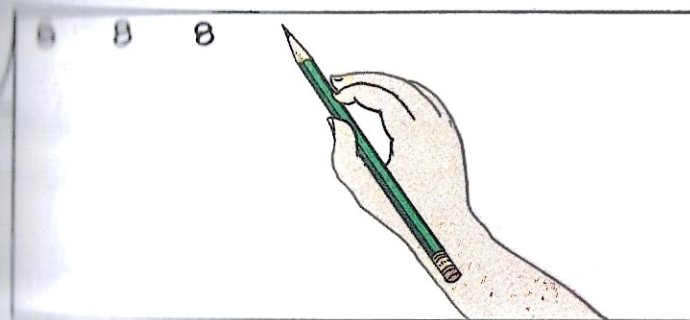
Try to finish the exercises on this page correctly in 3 minutes. Your teacher will tell you when to start.

Lay your paper below the first row of examples and write the sums. Do not copy the examples.

1. $\begin{array}{r} 6 \\ 1 \end{array}$ $\begin{array}{r} 2 \\ 6 \end{array}$ $\begin{array}{r} 4 \\ 2 \end{array}$ $\begin{array}{r} 3 \\ 3 \end{array}$ $\begin{array}{r} 3 \\ 1 \end{array}$ $\begin{array}{r} 1 \\ 7 \end{array}$ $\begin{array}{r} 1 \\ 8 \end{array}$ $\begin{array}{r} 3 \\ 2 \end{array}$ $\begin{array}{r} 1 \\ 5 \end{array}$

Now fold the top of the paper down and write the sums for exercise 2.

2. $\begin{array}{r} 3 \\ 4 \end{array}$ $\begin{array}{r} 7 \\ 1 \end{array}$ $\begin{array}{r} 6 \\ 2 \end{array}$ $\begin{array}{r} 5 \\ 3 \end{array}$ $\begin{array}{r} 7 \\ 2 \end{array}$ $\begin{array}{r} 3 \\ 5 \end{array}$ $\begin{array}{r} 2 \\ 7 \end{array}$ $\begin{array}{r} 2 \\ 3 \end{array}$ $\begin{array}{r} 2 \\ 5 \end{array}$



Fold the paper again and write the sums for exercise 3.

3. $\begin{array}{r} 1 \\ 6 \end{array}$ $\begin{array}{r} 8 \\ 1 \end{array}$ $\begin{array}{r} 5 \\ 2 \end{array}$ $\begin{array}{r} 6 \\ 3 \end{array}$ $\begin{array}{r} 4 \\ 5 \end{array}$ $\begin{array}{r} 5 \\ 4 \end{array}$ $\begin{array}{r} 3 \\ 4 \end{array}$ $\begin{array}{r} 4 \\ 3 \end{array}$ $\begin{array}{r} 3 \\ 6 \end{array}$

1. The game called Tossing the Ring can be played on the floor of a room. The floor plan at the right shows what to draw on the floor.

Draw the plan. Make the lines in your plan like the lines in the picture.

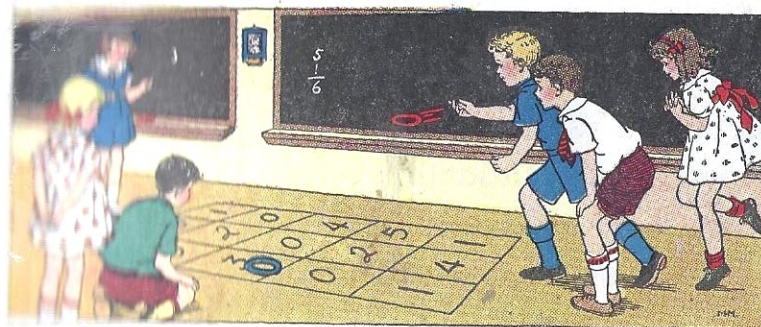
1	3	1
5	2	0
3	0	4
0	2	5
1	4	1

2. Each part of the plan is a **square**. The sides of each part are equal and the corners are square like the corners of your room. How many of these little squares are there in the plan?

3. In each square is a number. Put the same numbers in your plan. Be sure to get each number in the right square.

In Tossing the Ring each child has two throws. Each ring should fall in a square. He adds the two numbers. Their sum is his score in the game. Sometimes a ring falls on 2 squares. Then the square counts that most of the ring is in.

FLOOR PLAN



1. Jack and his friends played Tossing the Ring. Mary wrote the scores. On Jack's first throw the ring fell on a square marked 3. On the second throw it fell on a square marked 0. What score did Jack make? $3 + 0 = ?$

0 is read **zero**. It means **none**, or **nothing**. Jack's score was 3 because he had nothing to add to the 3.

His score was _____

3
0
3

0 means none.

2. Play the game, Tossing the Ring. Write your scores in a column and add to see who wins the game.

Adding Zero

3. Mary's first ring struck a square marked 4. On her second throw it struck a square marked 0. Her second throw added nothing to her score. $4 + 0 = 4$

Mary wrote her score $\longrightarrow$

$$\begin{array}{r} 4 \\ 0 \\ \hline 4 \end{array}$$

If nothing (0) is added to a number, the number is not changed.

4. Read these examples.

$$\begin{array}{llll} 6 + 0 = 6 & 0 + 6 = 6 & 9 + 0 = 9 & 0 + 9 = 9 \\ 0 + 8 = 8 & 8 + 0 = 8 & 5 + 0 = 5 & 0 + 5 = 5 \end{array}$$

5. Henry threw the ring twice on a square marked 0. He got nothing on either throw.

Henry's score was $\longrightarrow$

$$\begin{array}{r} 0 \\ 0 \\ \hline 0 \end{array}$$

0 added to 0 always equals 0.

6. Say the sum to each example.

$$\begin{array}{lllll} 4 + 0 = & 0 + 0 = & 3 + 0 = & 7 + 0 = & 0 + 5 = \\ 0 + 9 = & 0 + 2 = & 8 + 0 = & 5 + 0 = & 0 + 8 = \end{array}$$

Adding Numbers, Sums Not More than 9

Who Won?

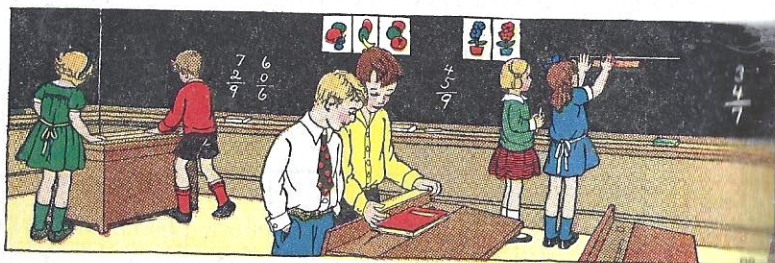
Find the scores of these games.

SECOND GAME			THIRD GAME			FOURTH GAME		
Jack	Mary	Henry	Jack	Mary	Henry	Jack	Mary	Henry
1	5	0	5	0	3	2	0	4
0	1	3	4	4	0	5	5	5

1. Who had the highest score in the second game? Who won the third game? Who won the fourth game?

Say the sum quickly in each example. Do not say the numbers to be added.

1	3	4	4	0	4	3	4	0
2	1	2	0	2	4	2	1	8
0	4	5	3	2	1	2	2	5
1	1	2	4	6	2	7	0	0
1	7	0	0	1	7	8	1	6
1	2	9	7	1	0	0	6	0
0	0	2	6	0	6	1	3	2
0	0	4	2	6	3	4	5	3



Measuring Things in the Schoolroom

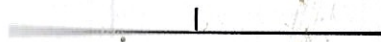
1. Can you find something in the room which you think is 1 yard long? Measure it with the yardstick. Is it longer or shorter than a yard?

2. Find things in the room which you think are 1 foot long. Measure them with your foot rule. Are they longer or shorter than a foot?

3. Draw a line which you think is 1 foot long. Then use the foot rule to see how nearly right your line is. Make the line exactly 1 foot long.

4. Use a foot rule to draw on the board a line 3 feet long. Now measure this line with a yardstick. Do you see that 1 yard is equal to 3 feet?

Many things less than a foot long are measured in **inches**. Your foot rule has inches marked upon it.

1.  This line is 2 inches long. Each part is 1 inch long.

2.  This line is 3 inches long. Into how many parts has it been marked off? Each part is 1 inch long.

3. We can measure inches with the foot rule. The heavy lines show the inches. How many inches does the rule show?

12 inches=1 foot 12 in.=1 ft.

4. Do you see that the inches are numbered on the ruler? What does the figure 1 on the ruler mean? 5? 6? 10?

5. How long is each of these lines?

(a) _____ (b) _____

(c) _____

Using the Ruler to Measure Things

1. Use a foot rule and find how many inches long these things are.

- (a) Your pencil
- (b) Your arithmetic
- (c) Your paint box



2. Without a ruler, try to draw a line 6 inches long. Then try to draw a line that is 10 inches long. Measure the lines. Are they too long or too short?

3. Use a foot rule and measure your yardstick. How many feet long is it?

4. Look at the numbers on your yardstick. Can you tell how many inches long the yardstick is?

5. What does the number 15 on your yardstick mean? What does the 24 mean? Is the number 12 one foot from the end?

$$\begin{aligned} 3 \text{ feet} &= 1 \text{ yard} \\ 3 \text{ ft.} &= 1 \text{ yd.} \end{aligned}$$

$$\begin{aligned} 36 \text{ inches} &= 1 \text{ yard} \\ 36 \text{ in.} &= 1 \text{ yd.} \end{aligned}$$

We often use feet and inches together when we tell how long something is or how tall some one is.



Edward measured John to see how tall he was. Just as high as the top of John's head, Edward made a mark on the board. Edward measured to see how many feet it was from the floor to the mark. It was 4 feet and

a little more. The "little more" was 2 inches. Edward said, "John is 4 feet and 2 inches tall."

1. Each of you may measure a classmate. Tell in feet and inches how tall he is.

2. Measure these things and tell in feet and inches how long they are.

- (a) Your desk
- (b) The window sill
- (c) The teacher's desk
- (d) A book shelf

3. Say the answers quickly.

$4 + 0 =$	$4 + 1 =$	$8 + 0 =$	$3 + 6 =$
$1 + 0 =$	$0 + 8 =$	$3 + 4 =$	$0 + 2 =$

KNOWING THAT YOU KNOW

Write the sums on paper. Fold the paper for each row.

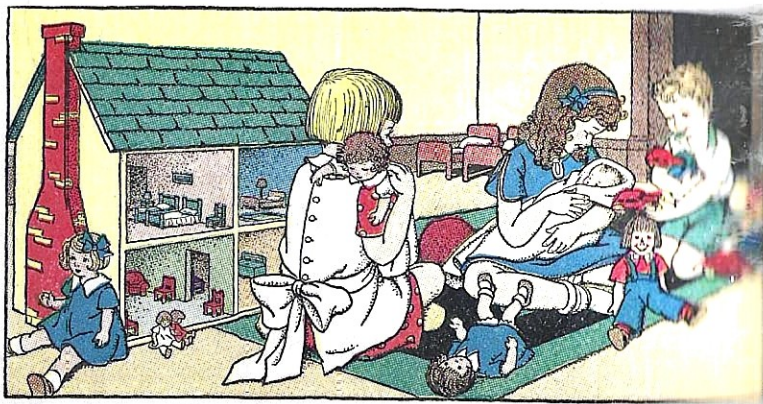
1. $\begin{array}{r} 7 \\ 1 \end{array}$ $\begin{array}{r} 3 \\ 0 \end{array}$ $\begin{array}{r} 1 \\ 2 \end{array}$ $\begin{array}{r} 4 \\ 5 \end{array}$ $\begin{array}{r} 9 \\ 0 \end{array}$ $\begin{array}{r} 3 \\ 6 \end{array}$ $\begin{array}{r} 6 \\ 2 \end{array}$ $\begin{array}{r} 5 \\ 3 \end{array}$
2. $\begin{array}{r} 3 \\ 4 \end{array}$ $\begin{array}{r} 1 \\ 0 \end{array}$ $\begin{array}{r} 2 \\ 7 \end{array}$ $\begin{array}{r} 6 \\ 3 \end{array}$ $\begin{array}{r} 0 \\ 7 \end{array}$ $\begin{array}{r} 0 \\ 8 \end{array}$ $\begin{array}{r} 3 \\ 2 \end{array}$ $\begin{array}{r} 5 \\ 2 \end{array}$
3. $\begin{array}{r} 1 \\ 5 \end{array}$ $\begin{array}{r} 2 \\ 4 \end{array}$ $\begin{array}{r} 0 \\ 5 \end{array}$ $\begin{array}{r} 4 \\ 4 \end{array}$ $\begin{array}{r} 7 \\ 2 \end{array}$ $\begin{array}{r} 5 \\ 4 \end{array}$ $\begin{array}{r} 2 \\ 2 \end{array}$ $\begin{array}{r} 3 \\ 1 \end{array}$
4. $\begin{array}{r} 4 \\ 1 \end{array}$ $\begin{array}{r} 5 \\ 0 \end{array}$ $\begin{array}{r} 2 \\ 3 \end{array}$ $\begin{array}{r} 0 \\ 4 \end{array}$ $\begin{array}{r} 1 \\ 8 \end{array}$ $\begin{array}{r} 0 \\ 2 \end{array}$ $\begin{array}{r} 1 \\ 7 \end{array}$ $\begin{array}{r} 2 \\ 5 \end{array}$
5. $\begin{array}{r} 2 \\ 6 \end{array}$ $\begin{array}{r} 5 \\ 1 \end{array}$ $\begin{array}{r} 0 \\ 6 \end{array}$ $\begin{array}{r} 1 \\ 6 \end{array}$ $\begin{array}{r} 8 \\ 0 \end{array}$ $\begin{array}{r} 3 \\ 3 \end{array}$ $\begin{array}{r} 2 \\ 0 \end{array}$ $\begin{array}{r} 1 \\ 4 \end{array}$
6. $\begin{array}{r} 0 \\ 3 \end{array}$ $\begin{array}{r} 0 \\ 0 \end{array}$ $\begin{array}{r} 8 \\ 1 \end{array}$ $\begin{array}{r} 3 \\ 5 \end{array}$ $\begin{array}{r} 0 \\ 1 \end{array}$ $\begin{array}{r} 4 \\ 3 \end{array}$ $\begin{array}{r} 0 \\ 9 \end{array}$ $\begin{array}{r} 1 \\ 3 \end{array}$

If you have any sums wrong, copy those examples. Then say the examples with the correct sums until you know them.

Do these exercises. Write the missing numbers. Then look at this page in the book and say the missing numbers quickly.

$\begin{array}{r} 0 \\ 0 \end{array}$	$\begin{array}{r} 0 \\ 1 \end{array}$	$\begin{array}{r} 1 \\ 0 \end{array}$	$\begin{array}{r} 1 \\ 1 \end{array}$	$\begin{array}{r} 0 \\ 2 \end{array}$	$\begin{array}{r} 2 \\ 0 \end{array}$	$\begin{array}{r} 1 \\ 2 \end{array}$	$\begin{array}{r} 2 \\ - \end{array}$	$\begin{array}{r} 2 \\ 2 \end{array}$
$\begin{array}{r} 0 \\ 1 \end{array}$	$\begin{array}{r} 1 \\ 1 \end{array}$	$\begin{array}{r} 0 \\ 1 \end{array}$	$\begin{array}{r} 1 \\ 2 \end{array}$	$\begin{array}{r} 0 \\ 2 \end{array}$	$\begin{array}{r} 2 \\ 2 \end{array}$	$\begin{array}{r} 1 \\ 3 \end{array}$	$\begin{array}{r} 2 \\ 3 \end{array}$	$\begin{array}{r} 2 \\ 4 \end{array}$
$\begin{array}{r} 0 \\ 0 \end{array}$	$\begin{array}{r} 0 \\ 0 \end{array}$	$\begin{array}{r} 3 \\ - \end{array}$	$\begin{array}{r} 1 \\ - \end{array}$	$\begin{array}{r} 4 \\ - \end{array}$	$\begin{array}{r} 0 \\ - \end{array}$	$\begin{array}{r} 3 \\ 2 \end{array}$	$\begin{array}{r} - \\ 3 \end{array}$	$\begin{array}{r} - \\ 1 \end{array}$
$\begin{array}{r} 0 \\ 0 \end{array}$	$\begin{array}{r} 0 \\ 0 \end{array}$	$\begin{array}{r} 3 \\ - \end{array}$	$\begin{array}{r} 1 \\ - \end{array}$	$\begin{array}{r} 4 \\ - \end{array}$	$\begin{array}{r} 0 \\ - \end{array}$	$\begin{array}{r} 3 \\ 5 \end{array}$	$\begin{array}{r} - \\ 5 \end{array}$	$\begin{array}{r} - \\ 5 \end{array}$
$\begin{array}{r} 1 \\ 0 \end{array}$	$\begin{array}{r} 0 \\ 0 \end{array}$	$\begin{array}{r} 5 \\ - \end{array}$	$\begin{array}{r} 3 \\ 3 \end{array}$	$\begin{array}{r} 4 \\ - \end{array}$	$\begin{array}{r} 2 \\ - \end{array}$	$\begin{array}{r} 5 \\ - \end{array}$	$\begin{array}{r} 1 \\ - \end{array}$	$\begin{array}{r} 6 \\ - \end{array}$
$\begin{array}{r} 1 \\ 0 \end{array}$	$\begin{array}{r} 0 \\ 0 \end{array}$	$\begin{array}{r} 5 \\ - \end{array}$	$\begin{array}{r} 3 \\ 6 \end{array}$	$\begin{array}{r} 4 \\ - \end{array}$	$\begin{array}{r} 2 \\ - \end{array}$	$\begin{array}{r} 5 \\ - \end{array}$	$\begin{array}{r} 1 \\ - \end{array}$	$\begin{array}{r} 6 \\ - \end{array}$
$\begin{array}{r} 0 \\ 0 \end{array}$	$\begin{array}{r} 0 \\ 0 \end{array}$	$\begin{array}{r} 4 \\ - \end{array}$	$\begin{array}{r} 5 \\ - \end{array}$	$\begin{array}{r} 2 \\ - \end{array}$	$\begin{array}{r} 6 \\ - \end{array}$	$\begin{array}{r} 1 \\ - \end{array}$	$\begin{array}{r} 7 \\ - \end{array}$	$\begin{array}{r} 0 \\ - \end{array}$
$\begin{array}{r} 0 \\ 0 \end{array}$	$\begin{array}{r} 0 \\ 0 \end{array}$	$\begin{array}{r} 4 \\ - \end{array}$	$\begin{array}{r} 5 \\ - \end{array}$	$\begin{array}{r} 2 \\ - \end{array}$	$\begin{array}{r} 6 \\ - \end{array}$	$\begin{array}{r} 1 \\ - \end{array}$	$\begin{array}{r} 7 \\ - \end{array}$	$\begin{array}{r} 0 \\ - \end{array}$
$\begin{array}{r} 1 \\ 0 \end{array}$	$\begin{array}{r} 0 \\ 0 \end{array}$	$\begin{array}{r} 3 \\ - \end{array}$	$\begin{array}{r} 6 \\ - \end{array}$	$\begin{array}{r} 2 \\ - \end{array}$	$\begin{array}{r} 7 \\ - \end{array}$	$\begin{array}{r} 1 \\ - \end{array}$	$\begin{array}{r} 8 \\ - \end{array}$	$\begin{array}{r} 0 \\ - \end{array}$
$\begin{array}{r} 1 \\ 0 \end{array}$	$\begin{array}{r} 0 \\ 0 \end{array}$	$\begin{array}{r} 3 \\ - \end{array}$	$\begin{array}{r} 6 \\ - \end{array}$	$\begin{array}{r} 2 \\ - \end{array}$	$\begin{array}{r} 7 \\ - \end{array}$	$\begin{array}{r} 1 \\ - \end{array}$	$\begin{array}{r} 8 \\ - \end{array}$	$\begin{array}{r} 0 \\ - \end{array}$
$\begin{array}{r} 0 \\ 0 \end{array}$	$\begin{array}{r} 0 \\ 0 \end{array}$	$\begin{array}{r} 6 \\ - \end{array}$	$\begin{array}{r} 3 \\ - \end{array}$	$\begin{array}{r} 7 \\ - \end{array}$	$\begin{array}{r} 2 \\ - \end{array}$	$\begin{array}{r} 8 \\ - \end{array}$	$\begin{array}{r} 1 \\ - \end{array}$	$\begin{array}{r} 9 \\ - \end{array}$
$\begin{array}{r} 0 \\ 0 \end{array}$	$\begin{array}{r} 0 \\ 0 \end{array}$	$\begin{array}{r} 6 \\ - \end{array}$	$\begin{array}{r} 3 \\ - \end{array}$	$\begin{array}{r} 7 \\ - \end{array}$	$\begin{array}{r} 2 \\ - \end{array}$	$\begin{array}{r} 8 \\ - \end{array}$	$\begin{array}{r} 1 \\ - \end{array}$	$\begin{array}{r} 9 \\ - \end{array}$

Taking One Number from Another Number



1. Ruth and Helen have 7 dolls. They want to give 4 of them to Jane and Bernice. How many dolls will they have left?



Cover 4 of the dolls with a piece of paper. How many are left?

2. The girls had 7 doll beds. They gave away 2 of them. How many are left?



Cover 2 of the doll beds with a piece of paper. How many are left?

Taking Away

1. Ruth and Helen had 6 doll chairs. Carl wanted 1 of the chairs. The girls gave Carl 1 chair. How many chairs did that leave for the girls?



Cover 1 of the chairs with a piece of paper. How many are left?

2. Carl had 8 little cars. He gave 2 of his cars to the girls. How many cars did he have left?



Cover 2 of the cars with a piece of paper. How many cars are left?

3. Carl got 7 books for his birthday. He read 3 of the books and gave them to the girls to read. How many books were left for Carl to read?

Draw 7 books. Use a piece of paper to show how many are left when you take away 3 of the books.



Looking Over the Books

The children counted the books in their corner library. They made this list.

9 Story Readers	(2 badly worn)
7 Animal Story Books	(3 badly worn)
8 Robinson Crusoe Readers	(2 badly worn)
9 Indian Stories	(5 worn)

The children put the worn books in a box. Miss Ross asked these questions.

1. You had 9 Story Readers and took away 2. How many Story Readers are left?

To find how many are left, the children said, Take 2 from 9.

Write the numbers in a column. Put the larger number above.

2 from 9 leaves 7.

Write 7 under 2.

There are 7 Story Readers left.

$$\begin{array}{r} 9 \\ 2 \\ \hline 7 \end{array}$$

2. You had 7 books of Animal Stories and took away 3. How many are left?

To find how many are left, the children said, Take 3 from 7.

Write 7 and 3 in a column. Put the larger number at the top.

3 from 7 leaves 4.

Write 4 under 3.

There are 4 books about animals left.

The children made more problems. Say the right number in each blank below.

3. We counted 9 books of Indian Stories and took away 5. How many books of Indian Stories did we leave?

To find how many are left, **subtract 5** from 9. 5 from 9 leaves

..... books of Indian Stories are left.

4. There were 8 Robinson Crusoe Readers. We took away 2. How many are left? 2 from 8 leaves

..... Robinson Crusoe Readers are left.

To find how many are left, we subtract.

Look at the first example. Say 4 from 5 = 1. Read all the examples in this way. Then cover the answers and say them.

$$\begin{array}{r} 5 \\ 4 \\ \hline 1 \end{array} \quad \begin{array}{r} 4 \\ 2 \\ \hline 2 \end{array} \quad \begin{array}{r} 4 \\ 1 \\ \hline 3 \end{array} \quad \begin{array}{r} 4 \\ 3 \\ \hline 1 \end{array} \quad \begin{array}{r} 7 \\ 4 \\ \hline 3 \end{array} \quad \begin{array}{r} 5 \\ 2 \\ \hline 3 \end{array} \quad \begin{array}{r} 6 \\ 5 \\ \hline 1 \end{array} \quad \begin{array}{r} 6 \\ 1 \\ \hline 5 \end{array} \quad \begin{array}{r} 6 \\ 2 \\ \hline 4 \end{array}$$

The number left is called the remainder.

Read and say the remainders.

2. 4 from 7 = 2 from 6 =
 3. 3 from 4 = 5 from 6 =

Read these exercises until you can cover the remainders and say them correctly.

$$\begin{array}{r} 5 \\ 3 \\ \hline 2 \end{array} \quad \begin{array}{r} 8 \\ 7 \\ \hline 1 \end{array} \quad \begin{array}{r} 9 \\ 8 \\ \hline 1 \end{array} \quad \begin{array}{r} 5 \\ 1 \\ \hline 4 \end{array} \quad \begin{array}{r} 7 \\ 3 \\ \hline 4 \end{array} \quad \begin{array}{r} 8 \\ 4 \\ \hline 4 \end{array} \quad \begin{array}{r} 6 \\ 3 \\ \hline 3 \end{array} \quad \begin{array}{r} 6 \\ 4 \\ \hline 2 \end{array} \quad \begin{array}{r} 7 \\ 6 \\ \hline 1 \end{array}$$

$$\begin{array}{r} 3 \\ 2 \\ \hline 1 \end{array} \quad \begin{array}{r} 8 \\ 6 \\ \hline 2 \end{array} \quad \begin{array}{r} 7 \\ 1 \\ \hline 6 \end{array} \quad \begin{array}{r} 2 \\ 1 \\ \hline 1 \end{array} \quad \begin{array}{r} 7 \\ 2 \\ \hline 5 \end{array} \quad \begin{array}{r} 8 \\ 1 \\ \hline 7 \end{array} \quad \begin{array}{r} 9 \\ 5 \\ \hline 4 \end{array} \quad \begin{array}{r} 9 \\ 1 \\ \hline 8 \end{array} \quad \begin{array}{r} 9 \\ 6 \\ \hline 3 \end{array}$$

$$\begin{array}{r} 8 \\ 5 \\ \hline 3 \end{array} \quad \begin{array}{r} 8 \\ 2 \\ \hline 6 \end{array} \quad \begin{array}{r} 9 \\ 3 \\ \hline 6 \end{array} \quad \begin{array}{r} 7 \\ 5 \\ \hline 2 \end{array} \quad \begin{array}{r} 9 \\ 2 \\ \hline 7 \end{array} \quad \begin{array}{r} 9 \\ 4 \\ \hline 5 \end{array} \quad \begin{array}{r} 8 \\ 3 \\ \hline 5 \end{array} \quad \begin{array}{r} 9 \\ 7 \\ \hline 2 \end{array} \quad \begin{array}{r} 3 \\ 1 \\ \hline 2 \end{array}$$

Making Problems in School

The children in Miss Hann's room made problems asking how many are left. Read each child's problem and tell the correct answer.



1. **Dick.** I had eight cents this morning, but I spent three cents for candy. How much money do I have left?

2. **Jim.** I had seven marbles in my pocket this morning but I lost some of them. Now I have only four. How many marbles did I lose?

3. **Tom.** Yesterday I found nine eggs in the barn. We used six of them this morning for breakfast. How many of the eggs have we left?

Make some problems for your classmates. Let each problem ask how many are left.

1. The sign $-$ means subtract. When we subtract 1 from 8 the remainder is 7. We may use the subtraction sign to show this $8-1=7$. Read the sign by saying minus.

Read: 8 minus 1 equals 7

Read: $8 - 1 = 7$

2. Read and give the remainders.

9 minus 4 7 minus 3 8 minus 3

Now write the examples, using the minus sign. Read the examples you have written with the signs.

3. Copy these subtraction examples and write the remainders.

$$\begin{array}{r} 6 \\ 1 \\ \hline \end{array} \quad \begin{array}{r} 7 \\ 2 \\ \hline \end{array} \quad \begin{array}{r} 8 \\ 3 \\ \hline \end{array} \quad \begin{array}{r} 6 \\ 4 \\ \hline \end{array} \quad \begin{array}{r} 4 \\ 1 \\ \hline \end{array} \quad \begin{array}{r} 6 \\ 5 \\ \hline \end{array} \quad \begin{array}{r} 9 \\ 3 \\ \hline \end{array} \quad \begin{array}{r} 2 \\ 1 \\ \hline \end{array}$$

$$\begin{array}{r} 7 \\ 1 \\ \hline \end{array} \quad \begin{array}{r} 6 \\ 2 \\ \hline \end{array} \quad \begin{array}{r} 9 \\ 5 \\ \hline \end{array} \quad \begin{array}{r} 9 \\ 6 \\ \hline \end{array} \quad \begin{array}{r} 9 \\ 7 \\ \hline \end{array} \quad \begin{array}{r} 8 \\ 5 \\ \hline \end{array} \quad \begin{array}{r} 7 \\ 4 \\ \hline \end{array} \quad \begin{array}{r} 7 \\ 5 \\ \hline \end{array}$$

4. Read the examples on your paper. Begin reading like this: 1 from 6 equals 5.

5. Now read the examples on your paper another way: 6 minus 1 equals 5.



Helen said, "Mother, it took me only 4 minutes to walk to school today." Mother said, "You must have walked fast." Helen said, "I always do. The most time I ever took was 7 minutes." What is the difference between the most time Helen has taken and the time she took today?

$$4 \text{ from } 7 = 3 \quad 7 - 4 = 3 \quad \frac{7}{4} = 3$$

To find the difference between two numbers, subtract the smaller number from the larger number.

1. Helen said, "Mother, our store is having a sale." Mother looked at the paper Helen was reading. "Yes," said Mother, "we need some soap. They are selling Sunbeam soap for 3¢ a cake. Last week it was 5¢ and last year I used to pay 6¢." What was the difference between the price Mother paid last year and the sale price? $6¢ - 3¢ = ?$

2. Oranges were on sale at 2¢ each. One time last winter Mother paid 5¢ each for oranges. What was the difference between the price of last winter and the sale price? $5¢ - 2¢ = ?$

3. Find the difference between each two numbers below. Read the examples like this, "The difference between 5 and 9 is 4. The difference between 8 and 6 is 2."

5 and 9	2 and 9	3 and 2	2 and 1
8 and 6	2 and 4	3 and 7	5 and 8
9 and 7	8 and 1	2 and 8	8 and 4
5 and 3	3 and 9	9 and 4	5 and 7

To find the difference, subtract the smaller number from the larger number.

The third grade has two groups for singing. In each group are 9 children.

1. Miss Ross said: We now have 5 Story Readers. How many more do we need so that each child in a group of 9 may have one?

We have 5. How many more do we need to make 9?

To find how many more are needed we subtract 5 from 9.

5 and 4 more are 9.

We need 4 more Story Readers.

2. We have 3 copies of Indian Stories. How many more do we need to make 9?

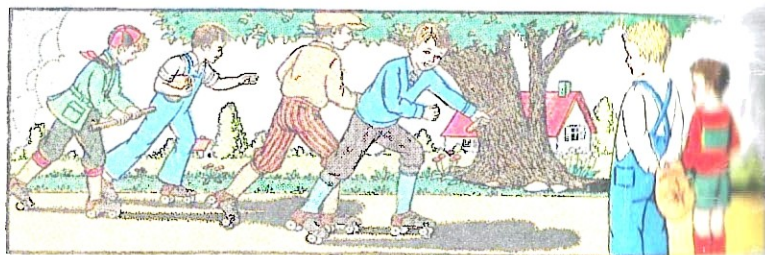
To find how many more are needed we subtract 3 from 9.

3 and 6 more are 9.

We need more to make 9.

3. Make problems in which you find how many more are needed.

To find how many more are needed, we subtract.



1. Six boys want to go roller skating. Only 4 of the boys have skates with them. How many more pairs of skates will the boys need?

2. Ted wants to buy an electric train that costs 9 dollars. He has 5 dollars. How many more dollars does he need?

3. Each of the 8 children in Alice's class must have 1 sheet of drawing paper. She has 6 sheets for them. How many more sheets does she need?

4. Nancy may ask 8 friends to her party. She has already asked 3. How many more may she ask?

5. Bob is at the toy store and wants to buy an 8-cent kite. He has only 4 cents with him. How many more cents must he have to buy the kite?

2. Tom is 8 years old and Frank is 9 years old. What is the difference in the ages of the two boys?

Use subtraction to find the difference.

3. The difference is 1 year.

4. Fred has 5 pennies and Tom has 3. What is the difference in the number of pennies they have? $5 - 3 = ?$

The answer in subtraction is called the remainder or the difference.

Find the remainders in each example without saying the numbers in the example.

A	B	C	D	E	F	G	H	I
$\begin{array}{r} 9 \\ 0 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ 0 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ 6 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ 7 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ 2 \\ \hline \end{array}$
$\begin{array}{r} 7 \\ 6 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ 6 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ 2 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ 4 \\ \hline \end{array}$	$\begin{array}{r} 2 \\ 1 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ 5 \\ \hline \end{array}$	$\begin{array}{r} 4 \\ 3 \\ \hline \end{array}$

What do we do to find

(a) How many are left?

(b) The difference?

(c) How many more are needed?

KNOWING THAT YOU KNOW

Copy and write the missing numbers.
What from 5 leaves 1? 4 from 5 leaves 1

$$\begin{array}{r} 1. \quad 5 \quad 4 \quad 6 \quad 4 \quad 7 \quad 7 \quad 6 \quad 7 \\ \quad \underline{1} \quad \underline{2} \quad \underline{3} \quad \underline{1} \quad \underline{1} \quad \underline{3} \quad \underline{2} \quad \underline{6} \end{array}$$

$$\begin{array}{r} 2. \quad 9 \quad 8 \quad 6 \quad 7 \quad 8 \quad 9 \quad 8 \quad 4 \\ \quad \underline{7} \quad \underline{1} \quad \underline{4} \quad \underline{2} \quad \underline{6} \quad \underline{8} \quad \underline{4} \quad \underline{8} \end{array}$$

$$\begin{array}{r} 3. \quad 3 \quad 8 \quad 3 \quad 9 \quad 5 \quad 6 \quad 7 \quad 9 \\ \quad \underline{1} \quad \underline{3} \quad \underline{2} \quad \underline{1} \quad \underline{4} \quad \underline{1} \quad \underline{6} \quad \underline{8} \end{array}$$

$$\begin{array}{r} 4. \quad 9 \quad 8 \quad 9 \quad 5 \quad 5 \quad 7 \quad 2 \quad 9 \\ \quad \underline{4} \quad \underline{5} \quad \underline{2} \quad \underline{2} \quad \underline{3} \quad \underline{4} \quad \underline{1} \quad \underline{6} \end{array}$$

Write the remainders on a folded paper

$$\begin{array}{r} 5. \quad 9 \quad 9 \quad 6 \quad 9 \quad 8 \quad 8 \quad 7 \quad 9 \\ \quad \underline{4} \quad \underline{6} \quad \underline{4} \quad \underline{5} \quad \underline{2} \quad \underline{3} \quad \underline{5} \quad \underline{7} \end{array}$$

If you made mistakes, say those examples correctly until you know them.

Students should be able to say quickly the subtraction facts asked for below.

Read and say the remainders. Read the examples like this, "5 from 7, 2."

$$\begin{array}{lll} 3 \text{ from } 7 & 2 \text{ from } 9 & 1 \text{ from } 8 \\ 7 \text{ from } 8 & 4 \text{ from } 5 & 3 \text{ from } 5 \\ 1 \text{ from } 6 & 1 \text{ from } 7 & 6 \text{ from } 9 \end{array}$$

$$\begin{array}{lll} 4 \text{ from } 9 & 6 \text{ from } 8 & 1 \text{ from } 4 \\ 2 \text{ from } 7 & 2 \text{ from } 5 & 3 \text{ from } 6 \\ 5 \text{ from } 6 & 6 \text{ from } 7 & 1 \text{ from } 9 \end{array}$$

$$\begin{array}{lll} 2 \text{ from } 8 & 7 \text{ from } 9 & 5 \text{ from } 8 \\ 3 \text{ from } 4 & 3 \text{ from } 7 & 1 \text{ from } 5 \\ 2 \text{ from } 8 & 2 \text{ from } 4 & 5 \text{ from } 9 \end{array}$$

Read each example below and say the difference between the two numbers. Read the first example like this, "7, 5, 2."

$$\begin{array}{lll} 8 \quad 5 & 8 \quad 4 & 4 \quad 2 \\ 3 \quad 6 & 3 \quad 4 & 9 \quad 4 \\ 6 \quad 4 & 3 \quad 1 & 8 \quad 7 \end{array}$$

$$\begin{array}{lll} 3 \quad 5 & 7 \quad 2 & 2 \quad 1 \\ 9 \quad 8 & 5 \quad 2 & 4 \quad 7 \\ 3 \quad 2 & 7 \quad 9 & 9 \quad 6 \end{array}$$

Addition and subtraction help each other. When you know $5 + 4 = 9$, it helps you know $4 + 5 = 9$. Knowing these facts helps you to know $9 - 5 = 4$, and $9 - 4 = 5$.

Say the right number for each blank.

- | | | |
|--------------------|--------------------|--------------------|
| 1. $2 + 7 = \dots$ | 2. $3 - 2 = \dots$ | 3. $4 + 1 = \dots$ |
| $7 + 2 = \dots$ | $3 - 1 = \dots$ | $1 + 4 = \dots$ |
| $9 - 7 = \dots$ | $2 + 1 = \dots$ | $5 - 4 = \dots$ |
| $9 - 2 = \dots$ | $1 + 2 = \dots$ | $5 - 1 = \dots$ |

When you know $2 + 3 = 5$ it is easy to know three more facts using 2, 3, and 5. $2 + 3 = 5$ helps you to know $3 + 2 = 5$, $5 - 3 = 2$, and $5 - 2 = 3$.

Give three more facts that go with each fact below. In the first example, $6 + 2 = 8$, $2 + 6 = 8$, $8 - 6 = 2$, $8 - 2 = 6$.

- | | | |
|----------------|----------------|----------------|
| 4. $6 + 2 = 8$ | 5. $6 + 1 = 7$ | 6. $9 - 4 = 5$ |
| $4 + 3 = 7$ | $5 + 2 = 7$ | $9 - 1 = 8$ |
| $5 + 1 = 6$ | $3 + 6 = 9$ | $7 - 1 = 6$ |
| $3 + 5 = 8$ | $6 - 4 = 2$ | $9 - 6 = 3$ |
| $1 + 7 = 8$ | $4 - 3 = 1$ | $8 - 5 = 3$ |



Sue and Nan were 9 years old. They were twins. Their last birthday was on the day before Easter. Mother set a little table on the sun porch for their lunch. Mother put 4 colored Easter eggs for the girls. Sue and Nan always shared things equally. Each of the girls took half of the eggs. Sue took 2 eggs and Nan took 2 eggs. $2 + 2 = 4$. The half of 4 is 2.

Sue and Nan liked peanut butter sandwiches. Mother made 6 peanut butter sandwiches for the girls.

Sue and Nan shared equally.



How many sandwiches did Sue take? How many did Nan take? What is one half of 6?



Sharing Things with Others

1. Harry wants to share his 8 tops equally with Frank. How many tops should he give Frank?

To share equally, each boy should have half of the tops. Harry's half should equal Frank's half. Harry put the same number of tops in each cap.

There were 4 tops in each cap. He should give Frank 4 tops.

Harry divided 8 tops into 2 equal parts.
 $4 + 4 = 8$ One-half of 8 is 4.

2. Julia has 4 dolls. She wishes to give Lucy one-half of her dolls. How many dolls should she give to Lucy? How many are one-half of 4?

A number written with two figures is called a **two-figure number**. Read these numbers written in words and see how they are written in figures.

ten	10	sixteen	16
eleven	11	seventeen	17
twelve	12	eighteen	18
thirteen	13	nineteen	19
fourteen	14	twenty	20
fifteen	15	twenty-one	21

3. Write these numbers in figures.

fifteen	thirteen	fourteen
eleven	nineteen	seventeen

4. Copy and finish each row of figures.
 Write the missing numbers.

21	22	—	25	—	—	28	—	30
31	32	—	—	35	36	—	—	39
41	—	44	—	—	47	—	—	—
51	52	—	—	56	—	58	—	—
61	—	64	—	—	67	—	—	—
71	—	—	75	—	—	—	—	—



1. Bobby bought some lollipops and a top. He gave a nickel for the top and 7 cents for the candy. How much did he give for these things? $5 + 7 = ?$

To find how much he gave we must add 5 and 7.

5
7
12

Write 7 under 5.

Add. $5 + 7 = 12$.

Write the 12 under 7.

Write the 1 at the left of 2.

The sum is. 12.

Bobby gave 12 cents for the top and the candy.

2. Read several times.

$$5 + 7 = 12$$

$$7 + 5 = 12$$

$$6 + 4 = 10$$

$$4 + 6 = 10$$



1. Dorothy used 7 buttons on one doll dress and 7 on another. How many buttons did Dorothy use on the two dresses?

Show how to write the numbers to add.

Add. $7 + 7 = 14$.

Where do we write the 4?

Where do we write the 1?

How many buttons did Dorothy use?

2. $8 + 6 = 14$ 14 is a two-figure sum. Write 8 and 6 in a column and add. Be sure to write the sum correctly.

3. Copy and write the sums.

$\begin{array}{r} 7 \\ 6 \end{array}$	$\begin{array}{r} 7 \\ 7 \end{array}$	$\begin{array}{r} 6 \\ 4 \end{array}$	$\begin{array}{r} 6 \\ 8 \end{array}$	$\begin{array}{r} 5 \\ 7 \end{array}$
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The Easter Egg Hunt

On Easter morning the boys and girls hunted brightly colored eggs. Four men had put the eggs around in the park.

The following problems are about the egg hunt. In each problem, write the numbers in a column and add.

1. Billy found 2 eggs in one nest and 9 in another. How many eggs did Billy find?
 $2 + 9 = 11$ $9 + 2 = 11$

2. Dorothy got 3 eggs and 7 more. How many eggs did Dorothy get?

$$3 + 7 = 10 \qquad 7 + 3 = 10$$

3. Bobby got the most eggs. He found 8 in one nest and 8 in another nest. How many are 8 eggs and 8 more eggs? $8 + 8 = 16$

4. At first Sue found a nest with 8 eggs. Then she found 4 more eggs. How many eggs did Sue find?

$$8 + 4 = 12 \qquad 4 + 8 = 12$$

5. Betty found almost as many as Bobby. She got 9 beside a tree and 6 near a pond. How many are 9 eggs and 6 eggs?

$$9 + 6 = 15 \qquad 6 + 9 = 15$$

6. Dick tried two times. He found 8 eggs and 3 eggs. How many are 8 and 3?

$$8 + 3 = 11 \qquad 3 + 8 = 11$$

7. Find the sums.

4	8	7	8	9	3	8
6	6	3	4	6	7	3
7	6	8	6	2	4	3
7	4	8	9	9	8	8

The children played games. The four boys went to hide candy rabbits.

1. The girls found 7 rabbits and the boys found 6 rabbits. How many rabbits did the boys and girls find?

$$7 + 6 = 13$$

$$6 + 7 = 13$$

Dorothy's father said, "I counted all the rabbits that you found. There should be 13 more."

The children went again to hunt.

2. The boys got 9 rabbits and the girls got 9. Did that make all of the rabbits?

$$9 + 9 = 18$$

Find the sums.

$$\begin{array}{r} 3. \quad \begin{array}{r} 9 \\ 2 \\ \hline \end{array} \quad \begin{array}{r} 7 \\ 3 \\ \hline \end{array} \quad \begin{array}{r} 6 \\ 4 \\ \hline \end{array} \quad \begin{array}{r} 4 \\ 3 \\ \hline \end{array} \quad \begin{array}{r} 7 \\ 6 \\ \hline \end{array} \end{array}$$

$$\begin{array}{r} 4. \quad \begin{array}{r} 3 \\ 7 \\ \hline \end{array} \quad \begin{array}{r} 4 \\ 8 \\ \hline \end{array} \quad \begin{array}{r} 6 \\ 9 \\ \hline \end{array} \quad \begin{array}{r} 8 \\ 3 \\ \hline \end{array} \quad \begin{array}{r} 9 \\ 9 \\ \hline \end{array} \end{array}$$

$$\begin{array}{r} 5. \quad \begin{array}{r} 4 \\ 6 \\ \hline \end{array} \quad \begin{array}{r} 3 \\ 6 \\ \hline \end{array} \quad \begin{array}{r} 6 \\ 8 \\ \hline \end{array} \quad \begin{array}{r} 7 \\ 5 \\ \hline \end{array} \quad \begin{array}{r} 8 \\ 4 \\ \hline \end{array} \end{array}$$



It was time to go home. One of the men gave the children boxes of candy eggs to give the children.

In problem 1, add $7 + 4$ in a column. Then add $4 + 7$ in a column. Do the same with the other problems in problem 2.

3. Dorothy got 7 blue eggs and 4 white eggs. How many are 7 eggs and 4 eggs?

$$7 + 4 = 11$$

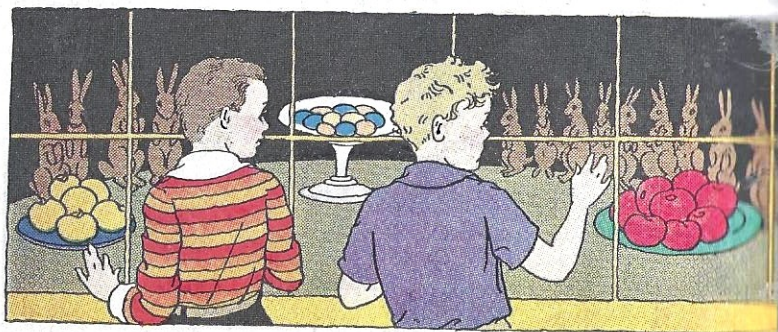
$$4 + 7 = 11$$

4. One of the boys got 9 red eggs and 3 brown eggs. How many are 9 and 3?

$$9 + 3 = 12$$

$$3 + 9 = 12$$

Do you see that the sum of two numbers is the same, whichever way you add the numbers? 12 is the sum of 9 and 3. The sum of 3 and 9 is 12 also.



Ted and Dick saw some candy apples and eggs in a store window. Back of the apples were some candy rabbits.

In each problem write the numbers in columns and add. Add them both ways.

1. The boys counted 8 large red apples on one plate and 6 yellow apples on another plate. How many apples were there on the two plates? How many are 8 apples and 6 apples?

$$8 + 6 = 14$$

$$6 + 8 = 14$$

2. Ted saw 6 yellow candy eggs and 5 blue candy eggs in the window. How many eggs are 6 eggs and 5 eggs?

$$6 + 5 = 11$$

$$5 + 6 = 11$$

3. Then Dick saw some small candy rabbits. He said, "See, here are 9 little rabbits. Over on that side are 4 more." How many are 9 and 4?

$$9 + 4 = 13$$

$$4 + 9 = 13$$

4. Ted saw 9 candy chickens in another window and Dick saw 8. How many candy chickens did they see?

$$9 + 8 = 17$$

$$8 + 9 = 17$$

5. Read these addition examples with the sums. Then cover the sums with a piece of paper and see how many you can remember.

$\begin{array}{r} 8 \\ 6 \\ \hline 14 \end{array}$	$\begin{array}{r} 6 \\ 5 \\ \hline 11 \end{array}$	$\begin{array}{r} 9 \\ 8 \\ \hline 17 \end{array}$	$\begin{array}{r} 7 \\ 6 \\ \hline 13 \end{array}$	$\begin{array}{r} 6 \\ 8 \\ \hline 14 \end{array}$	$\begin{array}{r} 4 \\ 8 \\ \hline 12 \end{array}$	$\begin{array}{r} 5 \\ 6 \\ \hline 11 \end{array}$
--	--	--	--	--	--	--

$\begin{array}{r} 7 \\ 4 \\ \hline 11 \end{array}$	$\begin{array}{r} 9 \\ 3 \\ \hline 12 \end{array}$	$\begin{array}{r} 4 \\ 7 \\ \hline 11 \end{array}$	$\begin{array}{r} 3 \\ 9 \\ \hline 12 \end{array}$	$\begin{array}{r} 6 \\ 7 \\ \hline 13 \end{array}$	$\begin{array}{r} 4 \\ 9 \\ \hline 13 \end{array}$	$\begin{array}{r} 4 \\ 6 \\ \hline 10 \end{array}$
--	--	--	--	--	--	--

$\begin{array}{r} 8 \\ 7 \\ \hline 15 \end{array}$	$\begin{array}{r} 6 \\ 9 \\ \hline 15 \end{array}$	$\begin{array}{r} 8 \\ 8 \\ \hline 16 \end{array}$	$\begin{array}{r} 3 \\ 8 \\ \hline 11 \end{array}$	$\begin{array}{r} 4 \\ 8 \\ \hline 12 \end{array}$	$\begin{array}{r} 8 \\ 9 \\ \hline 17 \end{array}$	$\begin{array}{r} 9 \\ 4 \\ \hline 13 \end{array}$
--	--	--	--	--	--	--

Nancy and Sue drew animals for a circus. Then they cut them out.

Write the numbers in columns and add both ways. In problem 1, add 8 and 5 the first way. Then add 5 and 8.

1. First they made 8 big elephants and 5 little ones. How many elephants did they make? $8 + 5 = 13$ $5 + 8 = ?$

2. The girls wanted more animals. They made 9 dogs and 7 horses. How many animals was that? $9 + 7 = 16$ $7 + 9 = ?$

3. Next they made 5 little bears and 9 big bears. How many bears did Nancy and Sue make? $5 + 9 = 14$ $9 + 5 = ?$

4. The girls then made 7 clown car drivers and 8 cowboys. How many people was that? $7 + 8 = 15$ $8 + 7 = ?$

5. They used the rest of their paper to make 8 large monkeys and 2 small monkeys. How many monkeys did Nancy and Sue make? $8 + 2 = 10$ $2 + 8 = ?$

6. The girls had spent 5 cents for the glue and 5 cents for some colored paper. How much had they spent? $5 + 5 = 10$

When reading, 4 and 5 are 9. Read the numbers the same way. Read the examples and the sums two or three times.

$$\begin{array}{r} 4 \\ 5 \\ \hline 9 \end{array} \quad \begin{array}{r} 6 \\ 6 \\ \hline 12 \end{array} \quad \begin{array}{r} 6 \\ 5 \\ \hline 11 \end{array} \quad \begin{array}{r} 5 \\ 6 \\ \hline 11 \end{array} \quad \begin{array}{r} 4 \\ 6 \\ \hline 10 \end{array} \quad \begin{array}{r} 6 \\ 4 \\ \hline 10 \end{array} \quad \begin{array}{r} 7 \\ 4 \\ \hline 11 \end{array}$$

$$\begin{array}{r} 8 \\ 7 \\ \hline 15 \end{array} \quad \begin{array}{r} 7 \\ 3 \\ \hline 10 \end{array} \quad \begin{array}{r} 8 \\ 3 \\ \hline 11 \end{array} \quad \begin{array}{r} 8 \\ 2 \\ \hline 10 \end{array} \quad \begin{array}{r} 2 \\ 8 \\ \hline 10 \end{array} \quad \begin{array}{r} 1 \\ 9 \\ \hline 10 \end{array} \quad \begin{array}{r} 9 \\ 1 \\ \hline 10 \end{array}$$

$$\begin{array}{r} 8 \\ 9 \\ \hline 17 \end{array} \quad \begin{array}{r} 4 \\ 9 \\ \hline 13 \end{array} \quad \begin{array}{r} 9 \\ 4 \\ \hline 13 \end{array} \quad \begin{array}{r} 8 \\ 4 \\ \hline 12 \end{array} \quad \begin{array}{r} 4 \\ 8 \\ \hline 12 \end{array} \quad \begin{array}{r} 5 \\ 8 \\ \hline 13 \end{array} \quad \begin{array}{r} 8 \\ 5 \\ \hline 13 \end{array}$$

$$\begin{array}{r} 7 \\ 8 \\ \hline 15 \end{array} \quad \begin{array}{r} 6 \\ 7 \\ \hline 13 \end{array} \quad \begin{array}{r} 8 \\ 7 \\ \hline 15 \end{array} \quad \begin{array}{r} 7 \\ 8 \\ \hline 15 \end{array} \quad \begin{array}{r} 6 \\ 8 \\ \hline 14 \end{array} \quad \begin{array}{r} 8 \\ 6 \\ \hline 14 \end{array} \quad \begin{array}{r} 9 \\ 6 \\ \hline 15 \end{array}$$

$$\begin{array}{r} 8 \\ 9 \\ \hline 17 \end{array} \quad \begin{array}{r} 6 \\ 9 \\ \hline 15 \end{array} \quad \begin{array}{r} 7 \\ 9 \\ \hline 16 \end{array} \quad \begin{array}{r} 9 \\ 7 \\ \hline 16 \end{array} \quad \begin{array}{r} 9 \\ 8 \\ \hline 17 \end{array} \quad \begin{array}{r} 8 \\ 9 \\ \hline 17 \end{array} \quad \begin{array}{r} 9 \\ 9 \\ \hline 18 \end{array}$$

Now cover the sums. Read each example and give the sum.

1. Can you give the sums for these examples quickly without a mistake?

$$\begin{array}{r} 9 \\ 5 \end{array} \quad \begin{array}{r} 7 \\ 6 \end{array} \quad \begin{array}{r} 9 \\ 3 \end{array} \quad \begin{array}{r} 2 \\ 8 \end{array} \quad \begin{array}{r} 6 \\ 6 \end{array} \quad \begin{array}{r} 5 \\ 8 \end{array} \quad \begin{array}{r} 9 \\ 4 \end{array} \quad \begin{array}{r} 4 \\ 9 \end{array}$$

2. The children sold tickets for the school play, "The Fairy Princess." Mr. Scott wrote on the board the names of the ten children who had sold the most tickets. How many had each child sold?

Name	25¢ tickets	10¢ tickets	Total
Ann Jones	8	6	
Henry Carr	5	9	
David Vernon	8	7	
Grace Stark	7	8	
Lillian Wheat	5	7	
Rose Young	9	6	
Robert Wilson	9	7	
Ray West	7	9	
Helen Judd	8	5	
Sue Monroe	9	2	

Do these exercises. Put the missing numbers in the blank spaces. Then look at the page in the book and say the missing numbers quickly.

$$\begin{array}{r} 1 \\ 9 \end{array} \quad \begin{array}{r} 8 \\ 2 \end{array} \quad \begin{array}{r} 9 \\ 1 \end{array} \quad \begin{array}{r} 3 \\ 7 \end{array} \quad \begin{array}{r} 4 \\ 6 \end{array} \quad \begin{array}{r} 8 \\ 2 \end{array} \quad \begin{array}{r} 7 \\ 3 \end{array} \quad \begin{array}{r} 6 \\ 4 \end{array} \quad \begin{array}{r} 5 \\ 5 \end{array}$$

$$\begin{array}{r} 8 \\ 2 \end{array} \quad \begin{array}{r} 8 \\ 2 \end{array} \quad \begin{array}{r} 7 \\ 1 \end{array} \quad \begin{array}{r} 4 \\ 7 \end{array} \quad \begin{array}{r} 6 \\ 5 \end{array} \quad \begin{array}{r} 5 \\ 3 \end{array} \quad \begin{array}{r} 9 \\ 2 \end{array} \quad \begin{array}{r} 2 \\ 6 \end{array} \quad \begin{array}{r} 6 \\ 6 \end{array}$$

$$\begin{array}{r} 9 \\ 9 \end{array} \quad \begin{array}{r} 8 \\ 4 \end{array} \quad \begin{array}{r} 8 \\ 4 \end{array} \quad \begin{array}{r} 4 \\ 7 \end{array} \quad \begin{array}{r} 7 \\ 5 \end{array} \quad \begin{array}{r} 5 \\ 7 \end{array} \quad \begin{array}{r} 7 \\ 6 \end{array} \quad \begin{array}{r} 6 \\ 8 \end{array} \quad \begin{array}{r} 8 \\ 8 \end{array}$$

$$\begin{array}{r} 8 \\ 6 \end{array} \quad \begin{array}{r} 9 \\ 4 \end{array} \quad \begin{array}{r} 4 \\ 7 \end{array} \quad \begin{array}{r} 7 \\ 8 \end{array} \quad \begin{array}{r} 8 \\ 6 \end{array} \quad \begin{array}{r} 6 \\ 9 \end{array} \quad \begin{array}{r} 9 \\ 5 \end{array} \quad \begin{array}{r} 5 \\ 9 \end{array} \quad \begin{array}{r} 9 \\ 9 \end{array}$$

$$\begin{array}{r} 8 \\ 8 \end{array} \quad \begin{array}{r} 7 \\ 8 \end{array} \quad \begin{array}{r} 8 \\ 9 \end{array} \quad \begin{array}{r} 9 \\ 7 \end{array} \quad \begin{array}{r} 7 \\ 9 \end{array} \quad \begin{array}{r} 9 \\ 8 \end{array} \quad \begin{array}{r} 8 \\ 9 \end{array} \quad \begin{array}{r} 9 \\ 9 \end{array} \quad \begin{array}{r} 9 \\ 18 \end{array}$$



1. Betty's mother asked Mr. Grant to work in her garden Friday and Saturday. Mr. Grant worked 8 hours Friday and 9 hours Saturday. How many hours did he work in the two days? $8 + 9 = ?$

2. Mr. Grant planted 9 trees on Friday and 8 on Saturday. How many trees did he plant on both days? $9 + 8 = ?$

3. Betty found 8 yellow flowers and 9 red ones. How many are 8 flowers and 9 red ones? $8 + 9 = ?$

4. Think of two numbers whose sum is 17. Think of two other numbers whose sum is 17.

5. Think of two numbers whose sum is 13; whose sum is 15, 12, 11, 10, 9.

Joe and Jim helped the Boy Scouts get things to give to children.

Joe got 8 little trains. Jim got 9 little

trains. How many trains did the two boys

get? $8 + 9 = ?$

Write the numbers in a column.

Add down: $8 + 9 = 17$.

The sum is 17.

The boys got 17 trains.

To see if the answer is right, add from the bottom up. $9 + 8 = 17$ 17 is right.

This is called **checking** addition.

Find the sums and check.

1. The two boys brought in 5 sets of building blocks and 9 sets of ABC blocks. How many sets of blocks did they bring?

2. Joe brought in 9 wooden animals and Jim brought in 7. How many wooden animals did the two boys bring in?

3. Alice Lee brought 7 dolls to give the children. Jim's sister brought 6 dolls. How many dolls did the girls bring?

Checking Sums

In the exercises below write the sums on a folded paper. Add down in each example. Check each sum by adding up. See if you can give all the sums correctly.

$$\begin{array}{r} 8 \\ 0 \end{array} \quad \begin{array}{r} 9 \\ 1 \end{array} \quad \begin{array}{r} 8 \\ 2 \end{array} \quad \begin{array}{r} 8 \\ 3 \end{array} \quad \begin{array}{r} 3 \\ 5 \end{array} \quad \begin{array}{r} 5 \\ 6 \end{array} \quad \begin{array}{r} 5 \\ 9 \end{array} \quad \begin{array}{r} 9 \\ 7 \end{array} \quad \begin{array}{r} 5 \\ 7 \end{array}$$

$$\begin{array}{r} 7 \\ 3 \end{array} \quad \begin{array}{r} 9 \\ 2 \end{array} \quad \begin{array}{r} 7 \\ 4 \end{array} \quad \begin{array}{r} 9 \\ 3 \end{array} \quad \begin{array}{r} 3 \\ 9 \end{array} \quad \begin{array}{r} 9 \\ 9 \end{array} \quad \begin{array}{r} 9 \\ 6 \end{array} \quad \begin{array}{r} 8 \\ 5 \end{array} \quad \begin{array}{r} 8 \\ 4 \end{array}$$

$$\begin{array}{r} 7 \\ 5 \end{array} \quad \begin{array}{r} 6 \\ 8 \end{array} \quad \begin{array}{r} 2 \\ 9 \end{array} \quad \begin{array}{r} 5 \\ 4 \end{array} \quad \begin{array}{r} 6 \\ 5 \end{array} \quad \begin{array}{r} 7 \\ 7 \end{array} \quad \begin{array}{r} 8 \\ 9 \end{array} \quad \begin{array}{r} 5 \\ 8 \end{array} \quad \begin{array}{r} 6 \\ 6 \end{array}$$

$$\begin{array}{r} 4 \\ 9 \end{array} \quad \begin{array}{r} 7 \\ 9 \end{array} \quad \begin{array}{r} 7 \\ 8 \end{array} \quad \begin{array}{r} 8 \\ 7 \end{array} \quad \begin{array}{r} 9 \\ 5 \end{array} \quad \begin{array}{r} 9 \\ 8 \end{array} \quad \begin{array}{r} 2 \\ 7 \end{array} \quad \begin{array}{r} 1 \\ 9 \end{array} \quad \begin{array}{r} 3 \\ 8 \end{array}$$

$$\begin{array}{r} 7 \\ 6 \end{array} \quad \begin{array}{r} 4 \\ 7 \end{array} \quad \begin{array}{r} 2 \\ 5 \end{array} \quad \begin{array}{r} 6 \\ 7 \end{array} \quad \begin{array}{r} 1 \\ 4 \end{array} \quad \begin{array}{r} 8 \\ 6 \end{array} \quad \begin{array}{r} 2 \\ 8 \end{array} \quad \begin{array}{r} 9 \\ 4 \end{array} \quad \begin{array}{r} 5 \\ 3 \end{array}$$

Did you make any mistakes? If you had any answers wrong, copy those examples and say the right answers until you are able to give them quickly.

Addition Problems

1. Bob and his father went on a canoe trip. The trip up the river took 8 days. Coming back down the river took only 5 days. How many days did they take for the river trip? $8 + 5 = ?$

2. Bob's father bought an ice cream cone for each of the children at the picnic. There were 9 boys and 5 girls. How many cones did he buy? $9 + 5 = ?$

3. Mary Louise brought 9 peanut butter sandwiches and 4 jelly sandwiches to the picnic. How many sandwiches did Mary Louise bring? $9 + 4 = ?$

4. Fred picked 7 quarts of berries one day and Marie picked 6 quarts. How many quarts did they pick together? $7 + 6 = ?$

5. Add 8 to each number.

3 5 8 2 6 7 4 9

6. Add 9 to each number.

2 7 4 1 3 6 5 9 8

7. Add 7 to each number.

4 6 5 8 7 9

Write the sums. Check each answer by adding up.

$$\begin{array}{r} 7 \\ 0 \end{array} \quad \begin{array}{r} 9 \\ 1 \end{array} \quad \begin{array}{r} 2 \\ 0 \end{array} \quad \begin{array}{r} 9 \\ 9 \end{array} \quad \begin{array}{r} 6 \\ 2 \end{array} \quad \begin{array}{r} 6 \\ 6 \end{array} \quad \begin{array}{r} 5 \\ 6 \end{array} \quad \begin{array}{r} 0 \\ 1 \end{array}$$

$$\begin{array}{r} 6 \\ 5 \end{array} \quad \begin{array}{r} 0 \\ 1 \end{array} \quad \begin{array}{r} 0 \\ 4 \end{array} \quad \begin{array}{r} 7 \\ 3 \end{array} \quad \begin{array}{r} 4 \\ 7 \end{array} \quad \begin{array}{r} 2 \\ 9 \end{array} \quad \begin{array}{r} 6 \\ 4 \end{array} \quad \begin{array}{r} 8 \\ 1 \end{array}$$

$$\begin{array}{r} 3 \\ 5 \end{array} \quad \begin{array}{r} 6 \\ 7 \end{array} \quad \begin{array}{r} 7 \\ 4 \end{array} \quad \begin{array}{r} 9 \\ 0 \end{array} \quad \begin{array}{r} 0 \\ 6 \end{array} \quad \begin{array}{r} 7 \\ 6 \end{array} \quad \begin{array}{r} 5 \\ 5 \end{array} \quad \begin{array}{r} 8 \\ 1 \end{array}$$

$$\begin{array}{r} 5 \\ 7 \end{array} \quad \begin{array}{r} 7 \\ 5 \end{array} \quad \begin{array}{r} 4 \\ 6 \end{array} \quad \begin{array}{r} 9 \\ 8 \end{array} \quad \begin{array}{r} 9 \\ 5 \end{array} \quad \begin{array}{r} 8 \\ 2 \end{array} \quad \begin{array}{r} 4 \\ 9 \end{array} \quad \begin{array}{r} 8 \\ 1 \end{array}$$

Look at the sign in each example. Write only the answers.

$$\begin{array}{r} 5 \\ -2 \end{array} \quad \begin{array}{r} 6 \\ -1 \end{array} \quad \begin{array}{r} 9 \\ +7 \end{array} \quad \begin{array}{r} 9 \\ -4 \end{array} \quad \begin{array}{r} 7 \\ -5 \end{array} \quad \begin{array}{r} 8 \\ +0 \end{array}$$

$$\begin{array}{r} 8 \\ -7 \end{array} \quad \begin{array}{r} 7 \\ -3 \end{array} \quad \begin{array}{r} 7 \\ -4 \end{array} \quad \begin{array}{r} 5 \\ +8 \end{array} \quad \begin{array}{r} 7 \\ -2 \end{array} \quad \begin{array}{r} 8 \\ -1 \end{array}$$

$$\begin{array}{r} 8 \\ -5 \end{array} \quad \begin{array}{r} 7 \\ +9 \end{array} \quad \begin{array}{r} 8 \\ -2 \end{array} \quad \begin{array}{r} 9 \\ -5 \end{array} \quad \begin{array}{r} 5 \\ +9 \end{array} \quad \begin{array}{r} 8 \\ -1 \end{array}$$

This chart gives you all the 100 facts in

Example: You want to know the sum of 8 and 5. Find 8 in the first column at the side. Now look across the right from 8 until you find the number 13 in the column under 5. The sum of 8 and 5 is 13.

Find the sum of 9 and 5. Find the sum of 8 and 7 and 9. 5 and 8.

What addition facts are hard for you? Find them on the chart.

Table of Sums

3	4	5	6	7	8	9
3	4	5	6	7	8	9
4	5	6	7	8	9	10
5	6	7	8	9	10	11
6	7	8	9	10	11	12
7	8	9	10	11	12	13
8	9	10	11	12	13	14
9	10	11	12	13	14	15
10	11	12	13	14	15	16
11	12	13	14	15	16	17
12	13	14	15	16	17	18

Using the Chart

Write the sums on a folded paper
down and check each sum by adding up

$$\begin{array}{r} 8 \\ 4 \\ \hline \end{array} \quad \begin{array}{r} 4 \\ 7 \\ \hline \end{array} \quad \begin{array}{r} 2 \\ 8 \\ \hline \end{array} \quad \begin{array}{r} 9 \\ 2 \\ \hline \end{array} \quad \begin{array}{r} 7 \\ 4 \\ \hline \end{array} \quad \begin{array}{r} 1 \\ 9 \\ \hline \end{array} \quad \begin{array}{r} 8 \\ 8 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ 5 \\ \hline \end{array} \quad \begin{array}{r} 7 \\ 3 \\ \hline \end{array} \quad \begin{array}{r} 2 \\ 9 \\ \hline \end{array} \quad \begin{array}{r} 7 \\ 7 \\ \hline \end{array} \quad \begin{array}{r} 3 \\ 8 \\ \hline \end{array} \quad \begin{array}{r} 5 \\ 6 \\ \hline \end{array} \quad \begin{array}{r} 8 \\ 3 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \\ 5 \\ \hline \end{array} \quad \begin{array}{r} 4 \\ 9 \\ \hline \end{array} \quad \begin{array}{r} 8 \\ 7 \\ \hline \end{array} \quad \begin{array}{r} 7 \\ 6 \\ \hline \end{array} \quad \begin{array}{r} 5 \\ 7 \\ \hline \end{array} \quad \begin{array}{r} 7 \\ 8 \\ \hline \end{array} \quad \begin{array}{r} 4 \\ 6 \\ \hline \end{array}$$

$$\begin{array}{r} 9 \\ 6 \\ \hline \end{array} \quad \begin{array}{r} 6 \\ 4 \\ \hline \end{array} \quad \begin{array}{r} 9 \\ 5 \\ \hline \end{array} \quad \begin{array}{r} 6 \\ 6 \\ \hline \end{array} \quad \begin{array}{r} 4 \\ 8 \\ \hline \end{array} \quad \begin{array}{r} 6 \\ 9 \\ \hline \end{array} \quad \begin{array}{r} 5 \\ 8 \\ \hline \end{array}$$

$$\begin{array}{r} 9 \\ 8 \\ \hline \end{array} \quad \begin{array}{r} 5 \\ 5 \\ \hline \end{array} \quad \begin{array}{r} 8 \\ 6 \\ \hline \end{array} \quad \begin{array}{r} 9 \\ 7 \\ \hline \end{array} \quad \begin{array}{r} 8 \\ 9 \\ \hline \end{array} \quad \begin{array}{r} 6 \\ 7 \\ \hline \end{array} \quad \begin{array}{r} 3 \\ 7 \\ \hline \end{array}$$

Did you write the correct sum in each example? The chart on page 83 will help you to check your addition facts.

If you made any mistakes, find the examples in the chart. Say each example and the correct sum two or three times. Be sure you know these sums.

